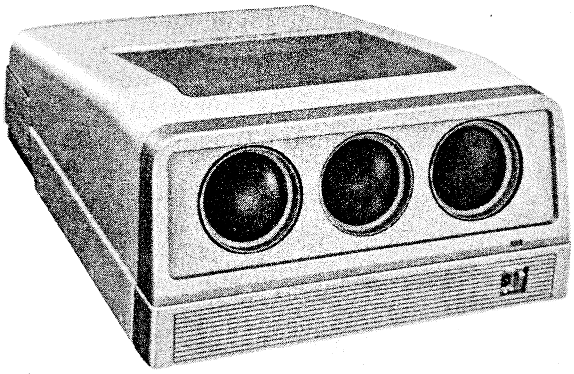
HDIH-1200M
RM-1200

SERVICE MANUAL

7074

AEP Model

Chassis No. SCC-D16B-A



HDVS

Note: The service manual for RM-1200 has been issued separately.

MODELS OF THE SAME SERIES	
HDIH-1200M	
HDIH-2400M	

SPECIFICATIONS

Optical

Projection system 3 picture tubes, 3 lenses, Horizontal in-line system

Picture tube 9-inch liquid cooled high brightness tube
LC^2 (Liquid Coupling and Cooling) system

Projection lens High performance HACC lens
F 1.24/172mm

Projected picture size 100—130 inches measured diagonally
Factory-adjusted to 120 inches measured diagonally

General

Light output 300 lm (white peak)
100 lm (all white)

Resolution (HDTV) 1000 TV lines (at screen center)
(VIDEO) 700 TV lines (at screen center)

Horizontal frequency 15kHz—35kHz

Vertical frequency 50Hz—120Hz

Color system PAL, SECAM, NTSC and $NTSC_{4.43}$ system, switched automatically

Test signal Test pattern generator is incorporated.

Inputs **INPUT A/B:** BNC connectors, 75 ohms terminated
G/Y, B/PB, R/PR
G: Composite, 1.0Vp-p ±2dB or non-composite, 0.7Vp-p ±2dB, positive
Sync signal is ±0.3Vp-p tri-level bipolar sync or 0.3Vp-p sync negative.
B, R: Non-composite, 0.7Vp-p ±2dB, positive
Y: Composite, 1.0Vp-p ±2dB or non-composite, 0.7Vp-p ±2dB
Sync signal is ±0.3Vp-p tri-level bipolar sync.
PB, PR: ±0.35Vp-p, sync signal is ±0.3Vp-p tri-level bipolar sync.

— Continued on next page —

HD PROJECTION HEAD
SONY®

7074

SYNC(HD): Composite sync or horizontal sync is ±0.3Vp-p tri-level bipolar sync or 0.2-4Vp-p sync, positive/negative
(VD): Vertical sync is 0.2-4Vp-p sync, positive/negative

VIDEO IN
- **Y/C:** 4-pin mini DIN connector
  Y(luminance) signal: 1 Vp-p ±2 dB, sync negative, 75 ohms terminated
  C (chrominance) signal: burst 0.286 Vp-p ±2 dB, 75 ohms terminated (NTSC)
  0,3 Vp-p ±2 dB, 75 ohms terminated (PAL)
- **VIDEO:** BNC connector
  Composite video input, 1 Vp-p, ±2 dB, sync negative, 75 ohms terminated

REMOTE 1 connector: 14-pin connector
REMOTE 2 connector: 9-pin connector
CONTROL S IN: minijack 5Vp-p

Outputs
VIDEO OUT: BNC connector
Composite video output, 1Vp-p ±2 dB, impedance 75 ohms, Outputs video signal from the VIDEO IN connector
CONTROL S OUT: minijack, 5 Vp-p

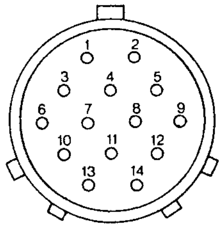
Power requirements 220—240 V AC, 50/60 Hz
Power consumption 120V: 7.2A
220—240V: 4A
Dimensions Approx. 743 × 402 × 998mm (w/h/d)
(29 3/8 × 15 7/8 × 39 3/8 inches)
Weight Approx. 99 kg (218 lb 4 oz)
Accessories supplied Remote Commander RM-1200 (1)
with 3 size AA(R6) batteries
Remote Commander cable (1)
AC power cord (1)
Handle kit (1 set)

Design and specifications are subject to change without notice.

Signal assignment

REMOTE 1 connector (14-pin)

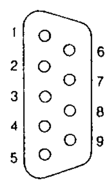
Pin No.	Signal
1	GND
2	HD/Composite Sync
3	SIRCS
4	NC
5	GND (SIRCS)
6	B/C
7	GND (B/C)
8	GND (G/Y)
9	G/Y
10	CONT (RGB/Video)
11	R/Composite Video
12	CONT (Composite Video/YC)
13	—
14	VD



REMOTE 2 connector (D-sub, 9-pin)

Pin No.	Signal
1	Frame Ground
2	Transmit A
3	Receive B
4	Receive Common
5	Spare
6	Transmit Common
7	Transmit B
8	Receive A
9	Frame Ground

RS-422 format



Y/C connector (4-pin mini DIN)

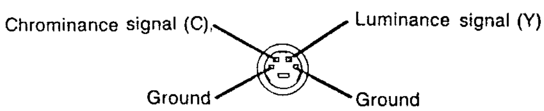
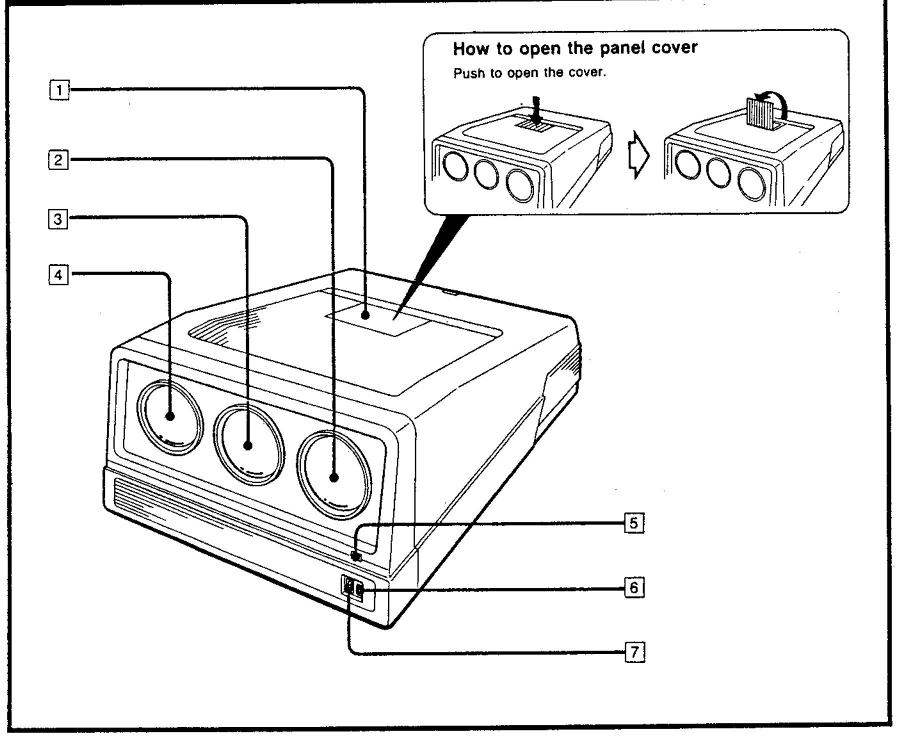


TABLE OF CONTENTS

SECTION 1
GENERAL

1-1. LOCATION AND FUNCTION OF CONTROLS

Front



1 **Control panel**
The keys inside the panel cover are the same as the Remote Commander.

2 **Red lens**

3 **Green lens**

4 **Blue lens**

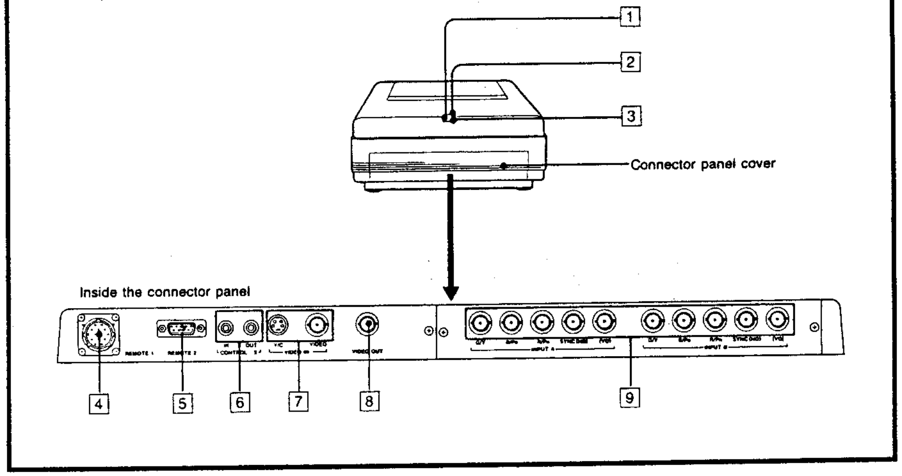
5 **Front remote control detector**

6 **MAIN POWER switch (| On/ ○ Off)**

7 **AC IN socket**
Connect the supplied AC power cord (mains lead).

Rear

To open the connector panel cover, see "How to open the connector panel cover".



1 **Rear remote control detector**

2 **POWER indicator**
Green indicator is on when the power is turned on.

3 **STANDBY indicator**
When the MAIN POWER is on, the red light indicating standby will be on. When the red light is on, the projector can be controlled with the Remote Commander.
Note
When the MAIN POWER is turned off, there will be a slight delay before the red light goes off.

4 **REMOTE 1 connector (14-pin)**
For future use.

5 **REMOTE 2 connector (9-pin)**
For future use.

6 **CONTROL S IN/OUT connectors**
Connect to the CONTROL S connectors of other Sony equipment. It is then possible to control the whole system with a single Remote Commander.
CONTROL S IN: Connect to the CONTROL S OUT of the Remote Commander to be used as a wired Commander.

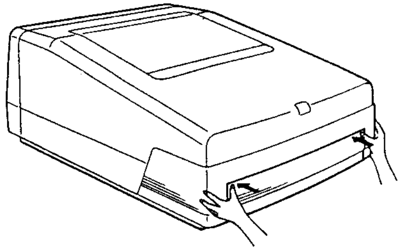
7 **VIDEO IN connectors**
Y/C (4-pin): Connect to the Y/C output of a VCR.
VIDEO (BNC type): Connect to the video output of a video equipment.
Note
The VIDEO connector is disconnected automatically when a cable is connected to the Y/C connector.

8 **VIDEO OUT connector (BNC type)**
Loop-through output of the VIDEO connector. Connect to the video input of a VCR or another monitor.
Note
The signal input from Y/C connector is not output from this connector.

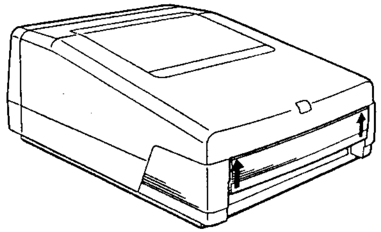
9 **INPUT A/B connectors (BNC type)**
G/Y, B/PB, R/PR, SYNC (HD), (VD):
Connect to the G/Y, B/PB, R/PR, SYNC (HD), (VD) outputs of high definition video products (BTA S-001 or SMPTE 240M standard) such as HDL-2000 videodisc player.

How to open the connector panel cover

1 **Push to open the cover.**

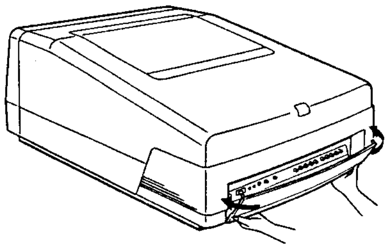


2 **Slide the cover upward as far as it can go.**



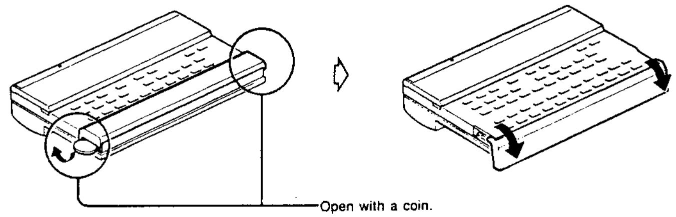
■ ***How to detach the panel cover***

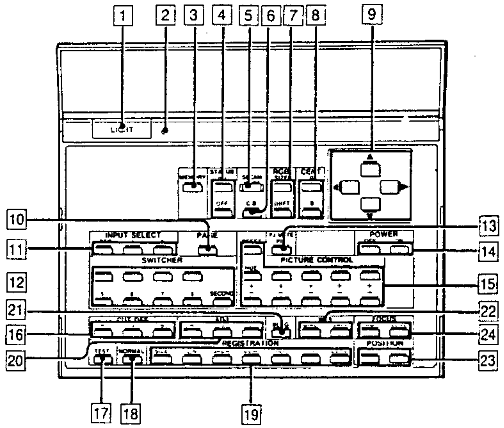
Bend the cover until it is detached.

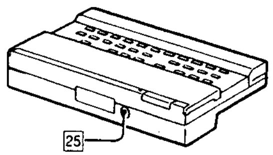


Remote Commander RM-1200

The adjustments key are covered with the panel in order to prevent the user from changing the registration adjustments. First remove the panel cover.







1 **LIGHT button**
Press to illuminate the indications on the Commander. The light will go off in about 10 seconds after any operation.

2 **Indicator**
Lights up when any of the keys on the Commander is pressed. If the indicator does not light, battery replacement is required.

3 **MEMORY key**
Press to store the adjusted data.

4 **STATUS ON/OFF key**
Press OFF key to clear the on-screen display. However, PAGE will be displayed even when in OFF mode. Press ON key to restore the on-screen display.

5 **SECAM key**
Press when the color of a picture from SECAM color source is incorrect. Press again to switch over to other standard system source, NTSC or PAL.

6 **C.B. (Clear Blue) key**
Press to make the blue color clear in the picture input from INPUT A/B connectors. Press again to restore the normal condition.

7 **RGB SIZE/SHIFT keys**
Press to adjust the picture input from INPUT A/B connectors.
SIZE: Press to enter the size adjustment mode.
The size adjustment of the picture is performed using the four arrow keys.
◄ ......to reduce horizontal size
► ......to expand horizontal size
▲ ......to expand vertical size
▼ ......to reduce vertical size
SHIFT: Press to enter the shift adjustment mode.
The shift adjustment of the picture is performed using the four arrow keys. The picture shifts according to the direction of the arrow.

8 **CENT R/B keys**
Press for centering adjustments of the red or blue.
R: Press to enter the red centering adjustment mode.
B: Press to enter the blue centering adjustment mode.
To enter the green centering adjustment mode, press CENT R key and B key simultaneously. The centering adjustments are performed using the four arrow keys.

9 **Arrow keys**
Used for various adjustments functions.

10 **PAGE key**
Press to display and switch the following five on-screen displays. (On PAGE 1, 2, 3 and 4, adjustment can also be done.)
PAGE 1: Displays STATUS ON/OFF, PIC MUTE ON/OFF CLEAR BLUE ON/OFF, and SECAM ON/OFF.
PAGE 2: Displays the picture conditions; contrast, color, brightness, sharpness and hue levels.
PAGE 3: Displays the selected MEMORY number.
PAGE 4: Displays the color temperature, input signal, color selection, sync source selection.
PAGE 5: Displays the input signal informations; fH, fV, H/C-sync, V-sync, Sync on Green, and input signal.

11 **INPUT SELECT keys**
Press to select the signal input.
VIDEO: to select the signal input from VIDEO IN (Y/C or VIDEO) connectors
A: to select the signal input from INPUT A connectors
B: to select the signal input from INPUT B connectors

12 **SWITCHER keys**
For future use.
Note
If you have pressed a number key by mistake while projecting a picture, the input channel will be switched and the input signal will be cut off.
To restore the picture, press the INPUT SELECT key (VIDEO, A or B) of the input signal to be projected.

13 **PJ MUTE PIC key**
Press to darken the screen. To restore the previous brightness level, press PIC again or CONTR+ key.

14 **POWER ON/OFF keys**
Press to turn on and off the projector.

15 **PICTURE CONTROL keys**
Press to adjust picture conditions; hue, sharpness, brightness, color, and contrast.
Press RESET key to restore the factory preset levels.

16 **CUT OFF R/G/B keys**
Press to select the color to be turned off when adjusting the registration.
R ......Red signal
G ......Green signal
B ......Blue signal
To restore the color, press the key again.

17 **TEST key**
Press to display the internal test patterns. Each press of this key displays 7 patterns sequentially. Appropriate patterns will be displayed in registration, white balance and focus adjustments modes.

18 **NORMAL key**
Press to cancel a test pattern or adjustment mode.

19 **REGISTRATION keys**
SIZE/LIN/SKEW/BOW/KEY/PIN/ZONE
Press to select the desired item for registration adjustment. The registration adjustments are performed using the four arrow keys, ADJ keys and POSITION +/− keys.

20 **ADJ R/G/B (Adjust red/green/blue) keys**
Press to select the color to be adjusted when adjusting the registration, white balance and focus adjustment.
R ......Red signal
G ......Green signal
B ......Blue signal

21 **BLKG (Blanking) key**
Press to enter the blanking adjustment mode. The blanking portion can be adjusted using four arrow keys.

22 **W/B (White balance) key**
Press to enter the white balance adjustment mode.
BIAS ...For cut off adjustment
GAIN ...For drive adjustment

23 **POSITION +/− keys**
Used for zone, blanking and magnetic focus adjustments.

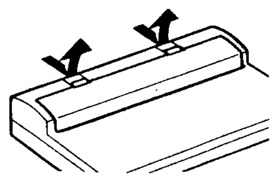
24 **FOCUS MG/LENS keys**
Press to enter the focus adjustment modes.
MG .....For magnetic focus adjustment
LENS ...For lens focus adjustment

25 **CONTROL S OUT connector**
Connect the supplied cable to this connector and to CONTROL S IN connector of the projector for wired Commander application.

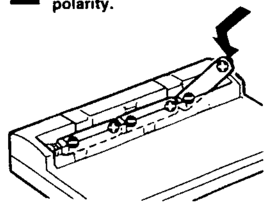
You can perform all the adjustments with the supplied Remote Commander RM-1200.
RM-1200 can be used both as a wireless Commander and as a wired Commander.
When adjusting we recommend you to use it as a wired Commander so that you can concentrate on the screen.

Battery installation

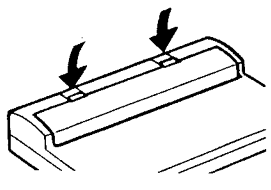
1 Push to open the lid.



2 Install three size AA (R6) batteries with the correct polarity.

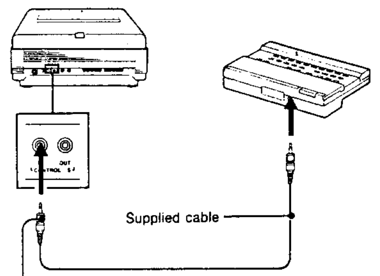


3 Replace the lid.



Notes
- If the projector does not operate properly, the batteries might be worn out. Replace all three of them with new batteries.
- The life of the batteries depends on frequency of usage how often you use the LIGHT button. If they wear out quickly, replace them with new alkaline batteries.
- To avoid damage from possible battery leakage, remove the batteries when the Commander will not be used for a long time.
- Be sure that there are no obstructions between the Commander and the set.
- Operable range is limited.
The shorter the distance between the Commander and the projector, the wider the angle within which the Commander can control the projector.

To connect the Remote Commander to the projector

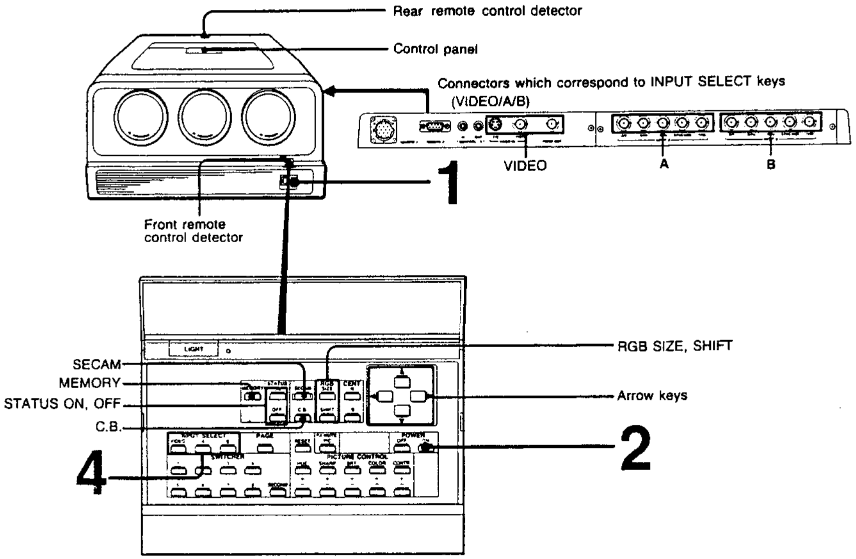


Turn the screw clockwise to fix the plug on the CONTROL S IN connector of the projector.

Notes
- When the connection is made, the remote control detectors of the projector will not function.
- For wireless operation, make sure to disconnect both plugs after the wired Commander.

1-2. PROJECTING

The keys on the control panel of the projector are the same as those found on the Remote Commander.



1 Turn the MAIN POWER of the projector on (|).

2 Turn the power on by pressing the POWER ON key of the Remote Commander or the control panel of the projector.

3 Turn on the connected equipment.

4 Select the input signal to be projected by pressing INPUT SELECT key (VIDEO, A or B).

VIDEO: to select the signal input from VIDEO IN connectors
A: to select the signal input from INPUT A connectors
B: to select the signal input from INPUT B connectors

5 Adjust the picture.

To cut the on-screen display

Press STATUS OFF. However, PAGE will be displayed even when in OFF mode. "OFF" indication will be displayed if a key is pressed when in OFF mode. ("OFF" will be displayed in green if the key functions, and in yellow if the key does not function.) To restore the on-screen display, press STATUS ON.

To darken the screen (PIC MUTE)

Press PJ MUTE PIC key. To restore the previous brightness level, press PJ MUTE PIC key again or CONTR+ key.

Notes on projecting a signal from INPUT A/B connectors

- If necessary, adjust the size and shift of the picture using the RGB SIZE/SHIFT and arrow keys.
- To make the blue color clear, press C.B. (CLEAR BLUE ON). Press again to restore the normal condition (CLEAR BLUE OFF).

If the color of the picture is incorrect

When the input signal is from INPUT A/B connectors
Display PAGE 4 by pressing PAGE key, then check that the INPUT SIGNAL setting (GBR/YPBPR) is correct.

When the input color source is SECAM
Press SECAM key (SECAM ON). Press again to switch over to other standard system sources, NTSC or PAL (SECAM OFF).

If you wish to store the SECAM ON/OFF or C.B. ON/OFF setting, store the data .

Adjusting the Picture

Use the PICTURE CONTROL keys on the Remote Commander.
The adjustment levels are digitally displayed on the screen having a range of MIN, 1, 2, ..., 98, 99, MAX.

```
CONTR: 80
```

CONTR +/− keys:	+: to increase picture contrast −: to decrease picture contrast
COLOR +/− keys:	+: to make color intensity vivid −: to make color intensity pale
BRT +/− keys:	+: to make the picture brighter −: to make the picture darker
SHARP +/− keys:	+: to make the picture sharper −: to make the picture softer
HUE +/− keys:	+: to make skin tones greenish −: to make skin tones purplish

•COLOR and HUE controls do not function on the input signal from INPUT A/B connectors.
•HUE control does not function with PAL or SECAM color source.

To restore the factory preset levels

Press RESET key. The factory preset levels will be displayed on the screen. The following are the factory preset levels of each input signal.

■*Input signal from INPUT A/B*

```
PIC CONTROL
date reset
CONTR: 80
COLOR: - -
BRT:    50
SHARP: MIN
HUE:    - -
```

"− −" indicates that the control does not function on the input signal.

■*NTSC (VIDEO) input signal*

```
PIC CONTROL
data reset
CONTR: 80
COLOR: 50
BRT:    50
SHARP: 50
HUE:    50
```

■*PAL/SECAM (VIDEO) input signal*

```
PIC CONTROL
data reset
CONTR: 80
COLOR: 50
BRT:    50
SHARP: 50
HUE:    - -
```

Displaying the Current Control Settings and Conditions

Press PAGE key for displaying the following four on-screen displays. Adjustment can also be done on PAGE 1, 2, 3 and 4. The displays will switch as illustrated on the right every time PAGE key is pressed.

PAGE 1 → PAGE 2 → PAGE 3 → PAGE 4 → PAGE 5 → Original screen → PAGE 1

The displays in these illustrations are for INPUT A/B. When in VIDEO mode, the adjustable items are slightly different from the displays in these illustrations.

PAGE 1

```
PAGE 1                    INPUT-A
 USER PRESET
STATUS:        ON
PIC MUTE:      OFF
CLEAR BLUE:    OFF
SECAM;         ---

                     NEXT: [PAGE]
```

The STATUS ON/OFF, PIC MUTE ON/OFF, CLEAR BLUE (C.B.) ON/OFF, and SECAM ON/OFF settings are displayed. "– – –" indicates that the control does not function with the current input signal.
To change the settings, adjust with the appropriate key.

Note
CLEAR BLUE control does not function when in VIDEO mode.

PAGE 2

```
PAGE 2                    INPUT-A
 USER CONTROL
CONTR: 80
COLOR: --
BRT:    50
SHARP: MIN
HUE:    --

                     NEXT: [PAGE]
```

The picture conditions; contrast, color, brightness, sharpness, and hue levels are displayed.
"– –" indicates that the control does not function with current input.
To change the levels, adjust with PICTURE CONTROL keys.

Notes
- COLOR and HUE controls function with NTSC color source.
- HUE control does not function with PAL or SECAM color source.

PAGE 3

```
PAGE 3                     INPUT-A
 MEMORY PRESET
   MEMORY-1     MEMORY-5
   MEMORY-2     MEMORY-6
   MEMORY-3     MEMORY-7
   MEMORY-4     MEMORY-8

            SELECT: ◀ ▶ ▲ ▼
            NEXT:   [PAGE]
```

The MEMORY numbers are displayed.
The number being selected blinks in green.
To select the MEMORY number, press ◀, ▶, ▲ or ▼.

When the aspect ratio of the picture is 16:9, select MEMORY 1. When the aspect ratio of the picture is 4:3, select MEMORY 8. The standard registration data are preset in these two positions.
MEMORY 2-7 are for dealer use to store their own registration data.

The aspect ratio of the picture (16:9 or 4:3) is factory preset for each MEMORY number:
MEMORY 1 — 6: aspect ratio 16:9 (For INPUT A/B)
MEMORY 7 — 8: aspect ratio 4:3 (For VIDEO)

PAGE 4

```
PAGE 4                     INPUT-A
 SYSTEM PRESET
COLOR TEMPERATURE:
 HDTV1  HDTV2  VID1  VID2
INPUT SIGNAL: GBR YPBPR
COLOR SELECT:COL B&W
SYNC SOURCE: INT EXT
            SELECT: ◀ ▶ ▲ ▼
            NEXT:  [PAGE]
```

The following settings are displayed:
The number being selected blinks in green.

COLOR TEMPERATURE:
The color temperature is set to HDTV 1, HDTV 2, VID 1 or VID 2.
HDTV 1: 6500K for aspect ratio 16:9
HDTV 2: 9300K for aspect ratio 16:9
VID 1: 6500K for aspect ratio 4:3
VID 2: 9300K for aspect ratio 4:3
When changing the setting, select the item which the aspect ratio is appropriate for the picture to be projected.
INPUT SIGNAL: The input signal is GBR or YPBPR.
COLOR SELECT: The color select setting is COL (color) or B&W (black & white)
SYNC SOURCE: The sync source is INT (internal) or EXT (external).

Notes
- "INPUT SIGNAL", "COLOR SELECT" and "SYNC SOURCE" are not displayed when the input signal is from VIDEO IN.
- "SYNC SOURCE" is displayed only when both internal and external sync signals are input.

To change the setting, adjust by pressing ◀, ▶, ▲ or ▼ keys. If you wish to keep the setting on PAGE 3 and 4, store the data

PAGE 5

```
PAGE 5                INPUT-A
 INPUT INFO
fH :  33.7kHz
fV :  59.9Hz
H/C-SYNC:     NEG
V-SYNC:       NEG
SYNC ON G:  NEG
INPUT SIGNAL: GBR
              EXIT:  [PAGE]
```

The signal input conditions are displayed.

fH: The horizontal frequency of the input signal
fV: The vertical frequency of the input signal
H/C-SYNC: The polarity of the H/C-SYNC
V-SYNC: The polarity of the V-SYNC
SYNC ON G: The polarity of the SYNC on the Green

(POS: positive / NEG: negative / – – –: not input)

The sync signal being used is indicated in green, and the one not being used is indicated in white.

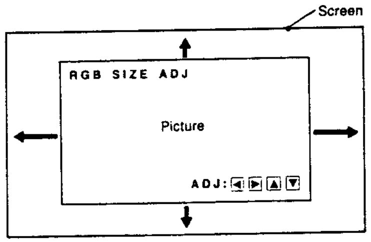
INPUT SIGNAL: The current input signal.
- GBR: GBR signal from INPUT A/B
- YPBPR: YPBPR signal from INPUT A/B
- NTSC: NTSC signal from VIDEO IN
- PAL: PAL signal from VIDEO IN
- SECAM: SECAM signal from VIDEO IN
- B&W: black and white signal from VIDEO IN
- Y/C: Y/C signal from VIDEO IN

RGB SIZE and SHIFT Adjustments (For INPUT A/B only)

If necessary, adjust the size and shift of the picture using the RGB SIZE/SHIFT and arrow keys.
This adjustment functions only with input signal from INPUT A or B connectors.

RGB SIZE adjustment

If size of the picture does not fit the screen, adjust RGB SIZE.



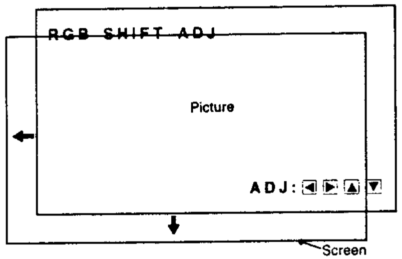
1 **Press RGB SIZE key.**

2 **Adjust by pressing arrow keys so that the picture fits the screen.**

◄ to reduce horizontal size
► to expand horizontal size
▲ to expand vertical size
▼ to reduce vertical size

RGB SHIFT adjustment

If the picture needs to be shifted to fit the screen, adjust RGB SHIFT.



1 **Press RGB SHIFT key.**

2 **Adjust by pressing arrow keys so that the picture fits the screen.**
The picture shifts according to the direction of the arrow.

If you wish to keep the current adjustment setting, store the data .

After the RGB SIZE/SHIFT adjustment, press the selected INPUT SELECT key (A or B) to cut the on-screen display.

Resetting RGB SIZE/SHIFT to factory preset condition

1 **Press RGB SIZE or SHIFT key.**

2 **Press ◄ and ► keys simultaneously.**
The following on-screen display appears on the screen.

```
RGB SIZE ADJ

RGB SIZE
DATA RESET MODE
Do you wish to return to
factory preset data?

                    YES: ▲
                    NO : ▼
```

3 **To restore the factory preset condition, press ▲ key.**
The following on-screen display appears to confirm that resetting was completed.

To keep the current setting instead of resetting, press ▼ key.

```
RGB SIZE ADJ

RGB SIZE
DATA RESET MODE
Reset complete!
```

Messages on the Screen

The meaning of the color

Four colors are used in the letters of on-screen display.

Color	Meaning
Green	Function and condition, item being selected on PAGE display
Cyan	Operation guide and messages
Yellow	Caution and error messages
White	Item being adjusted, item not being selected on PAGE display

Error message

When you perform an error in operation, the following messages will be displayed.

Messages	Meaning
Not applicable!	The control does not function with the current input.
PIC MUTE	PIC MUTE is set to ON. If you want to adjust the picture controls, press PJ MUTE PIC key to cancel the PIC MUTE mode.
Overflow!	RGB SIZE/SHIFT and CENT R/B adjustment range limit has been reached.
NO INPUT	No signal is input in the selected input mode.
OFF	STATUS is set to OFF to cut the on-screen display. To restore the on-screen display, press STATUS ON.

Storing the Adjustment Data

If you wish to save the picture adjustment changes, you must store them in memory.
The following conditions can be stored:

SECAM ON/OFF setting
CLEAR BLUE (C.B.) ON/OFF setting
The adjustment data of RGB SIZE
The adjustment data of RGB SHIFT
The setting data of PAGE 3; MEMORY numbers
The setting data of PAGE 4
- COLOR TEMPERATURE (HDTV 1/HDTV 2/ VID 1/VID 2)
- INPUT SIGNAL (GBR/YPBPR)
- COLOR SELECT (COL/B&W)
- SYNC SOURCE (INT/EXT)

1 **After the adjustment, press MEMORY key.**
The following on-screen display appears to indicate that storing has begun. While the display is on, no other keys will function.

```
MEMORY DATA
in saving!

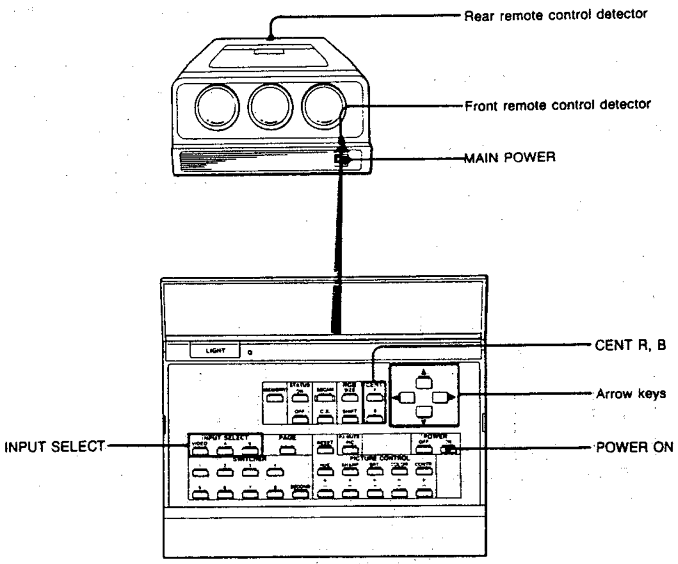

No key may be applicable
during the indication of
this mode.
```

2 The following on-screen display appears to confirm that storing has been completed.

```
MEMORY DATA
saving is
complete!
```

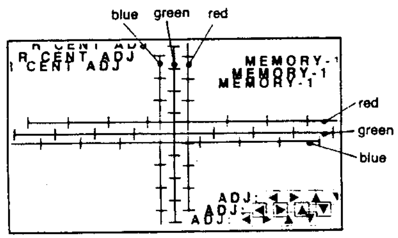
1-3. CENTERING ADJUSTMENT

The three colors red, green and blue must converge for proper projection. If they do not converge, centering adjustment is necessary.

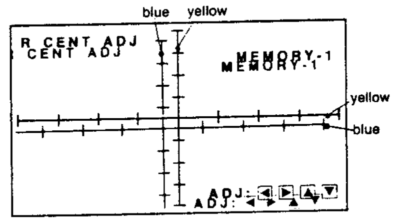


1 **Turn the MAIN POWER switch of the projector on (|) and press POWER ON key of the Remote Commander.**

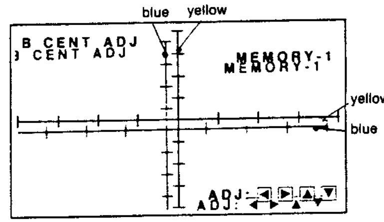
2 **Press CENT R key.**
The built-in cross hair test pattern will be displayed and the red line will be operable.



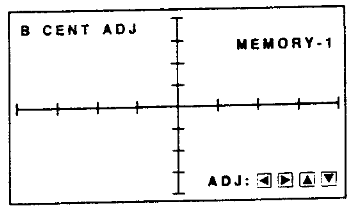
3 **Press arrow keys to move the red line so that the red and green lines converge.**
The red line will move according to the direction of the arrow.



4 **Press CENT B key**
The built-in cross hair test pattern will be displayed and the blue line will be operable.



5 **Press arrow keys to move the blue line so that the blue, green and red lines converge.**
When all three color lines converge, the test pattern will be seen as white.

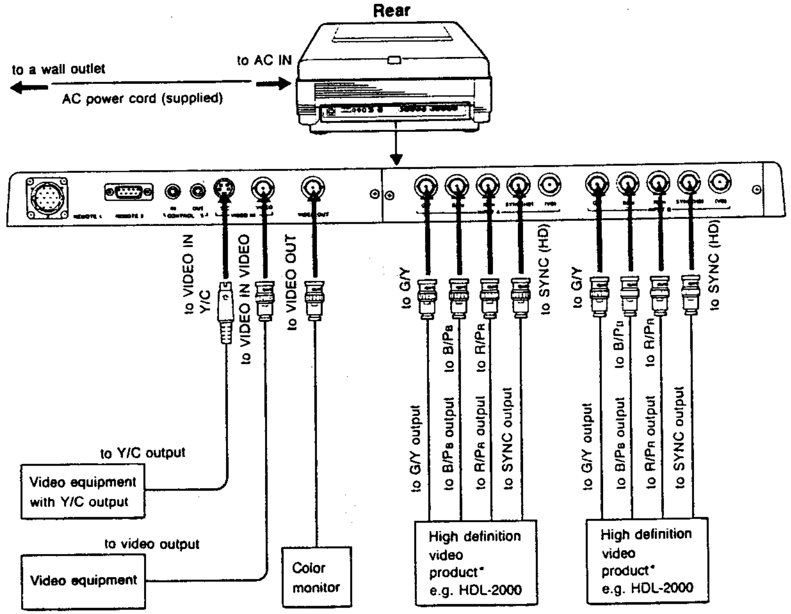


6 **Press the selected INPUT SELECT key** (VIDEO, A or B) **to exit the test pattern mode.**

1-4. SYSTEM CONNECTION

Notes on connection

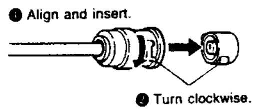
- First make sure that the power to each piece of equipment is turned off.
- Use connecting cables suitable for the equipment to be connected.
- The cable connectors should be fully inserted into the jacks. A loose connection may cause hum and noise.
- To disconnect the cable, pull it out by grasping the plug. Never pull the cable itself.
- Read the instruction manual of the equipment to be connected.



*BTA S-001 or SMPTE 240M standard equipment

Note
The VIDEO connector is disconnected automatically when a cable is connected to the Y/C connector.

BNC connectors



1-5. THIS PROJECTOR AND ADJUSTABLE PROJECTION SIZES

Model	Adjustable projection size (inch)	Factory set size (inch)
HDIH-1200M	100 — 130	120

- The projection size is measured diagonally.
- The aspect ratio is 16:9 (the standard size of HDTV).

1-6. INSTALLATION DIAGRAMS

Projection Size

For when screen is primarily for HDTV use (16:9)

■ *HDIH-1200M*

Unit: mm (inch)

Projection size (inch)	16:9		4:3
	height	width	width
100	1,245 (49.0)	2,215 (87.0)	1,660 (65 1/2)
110	1,370 (54.0)	2,435 (96.0)	1,830 (72.0)
120	1,495 (59.0)	2,660 (104 1/2)	1,995 (78 1/2)
130	1,620 (63 1/2)	2,880 (113 1/2)	2,160 (85.0)

For when screen is primarily for VIDEO use (4:3)

■ *HDIH-1200M*

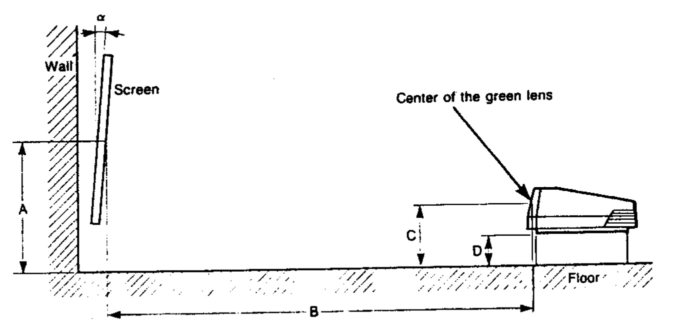
Unit: mm (inch)

Projection size (inch)	4:3		16:9
	width	height	height
100	2,030 (80.0)	1,525 (90.0)	1,145 (67 1/2)
110	2,235 (88.0)	1,675 (66.0)	1,260 (49 1/2)
120	2,440 (96.0)	1,830 (72.0)	1,371 (54.0)
130	2,640 (104.0)	1,980 (78.0)	1,490 (58 1/2)

Floor

Procedure

Installation of the screen
↓
Installation of the projector on a stand
↓
Connection with other equipment
↓
Power connection
↓
Remote Commander connection
↓
Settings for adjustments
↓
Focus adjustment
↓
Registration adjustment
↓
White balance adjustment (if necessary)
↓
RGB size, shift and blanking adjustment
↓
Memory of adjustment data



■ ***HDIH-1200M***

Unit: mm (inch)

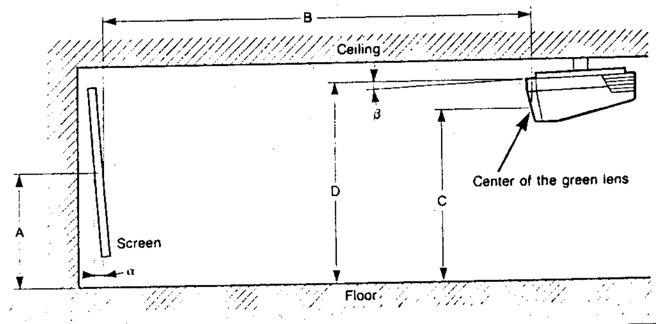
	Projection size (inch)			
	100	110	120	130
A	1,250 (49.0)	1,320 (52.0)	1,400 (55.0)	1,450 (57.0)
B	3,150 (124.0)	3,450 (136.0)	3,750 (147.0)	4,050 (159 1/2)
C	550 (21 1/2)	←	←	←
D	260 (10.0)	←	←	←
α°	+5	←	←	←

: Refer to the supplied Installation Diagrams in 1/20 Scale.

Ceiling

Procedure

Installation of the screen
↓
Polarity change
↓
Attaching the projector to the ceiling with PSS-1270
↓
Connection with other equipment
↓
Power connection
↓
Remote Commander connection
↓
Settings for adjustments
↓
↓
Registration adjustment
↓
White balance adjustment (if necessary)
↓
RGB size, shift and blanking adjustment
↓
Memory of adjustment data



■ *HDIH-1200M*

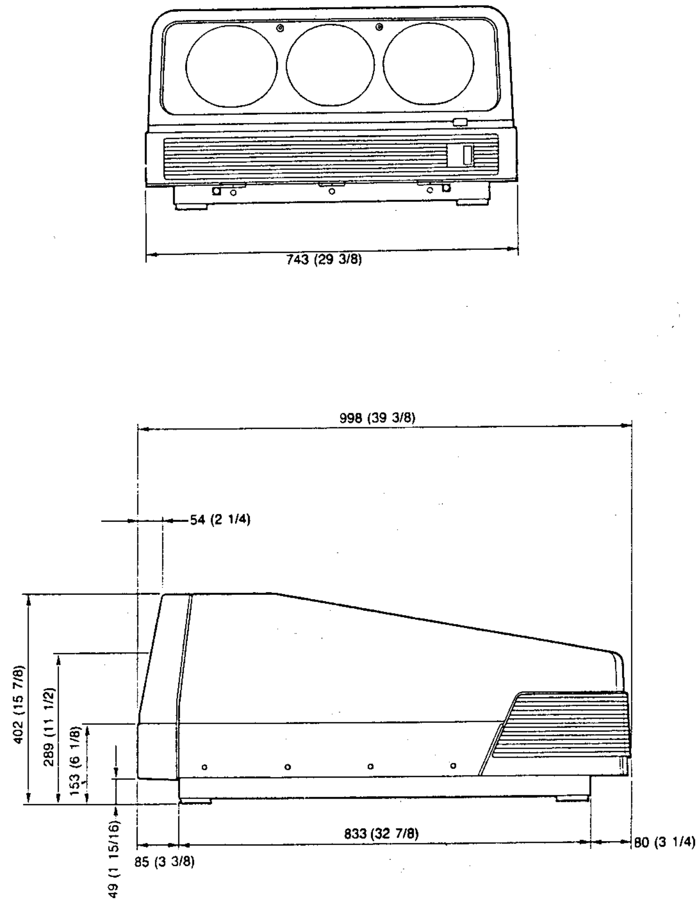
Unit: mm (inch)

	Projection size (inch)			
	100	110	120	130
A	1,650 (65)	1,600 (63)	1,550 (61)	1,490 (58 1/2)
B	3,200 (126)	3,500 (137 1/2)	3,800 (149 1/2)	4,100 (161 1/2)
C	2,550 (88 1/2)	←	←	←
D	2,360 (93)	←	←	←
α°	−4	←	←	←
β°	+2	←	←	←

: Refer to the supplied Installation Diagrams in 1/20 Scale.

1-7. DIMENSIONS

Unit: mm (inch)

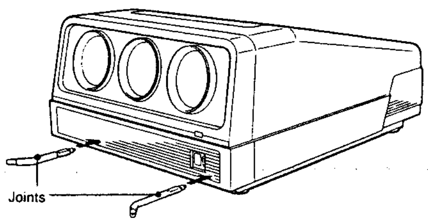


1-9. ATTACHING THE HANDLES AND PROJECTOR SUSPENSION SUPPORT

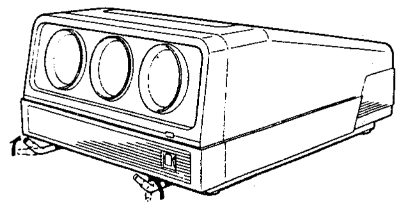
Attaching the Supplied Handles

The supplied handles can be attached to the front and rear of the projector for carrying.

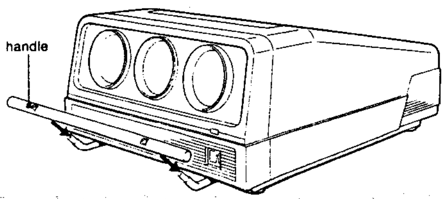
1 Insert the joints with the curved portion toward you to the square holes of the projector as far as they can go.



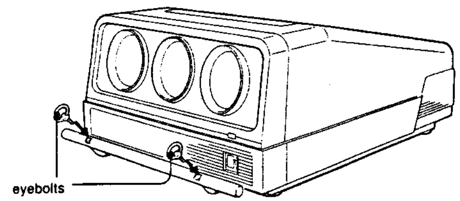
2 After inserting the joints, turn them upward by 90 degrees. Then try to pull the joints to confirm that they are fixed and cannot be pulled out.



3 Attach the handle to the joints.



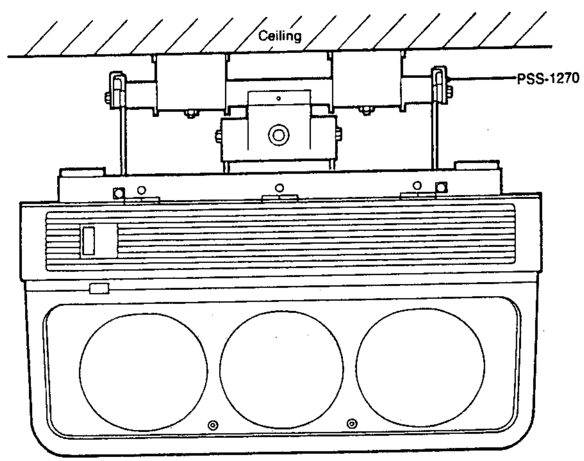
4 Fasten with the eyebolts.



5 Repeat the above steps for attaching the handle at the rear of the projector.

Attaching the set to the ceiling

Use the PSS-1270 projector suspension support (optional) to attach the unit to the ceiling. For details, see the instruction manual of the PSS-1270.



1-10. ON-SCREEN DISPLAY AND THE INTERNAL TEST PATTERNS

Messages on the Screen

Color of message

Four colors are used in the screen display.

Color	Meaning
Green	Function and condition, item being selected on PAGE display
Cyan	Operation guide and messages
Yellow	Caution and error messages
White	Item being adjusted, item not being selected on PAGE display

Error message

When an error occurs, the following messages will be displayed.

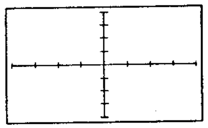
Message	Meaning
Not applicable!	The control does not function with the current input.
PIC MUTE	PIC MUTE is set to ON. If you want to adjust the picture controls, press PJ MUTE key to cancel the PIC MUTE mode.
Overflow!	Adjustable range had reached its limit.
NO INPUT	No signal is input in the selected input mode.
OFF	STATUS is set to OFF to clear the on-screen display. To restore the on-screen display, press STATUS ON.

Test Patterns

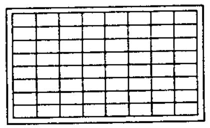
In each adjustment mode, an appropriate test pattern will be displayed. In addition, other test patterns (10 patterns) can be displayed by pressing TEST key.

All the Test Patterns

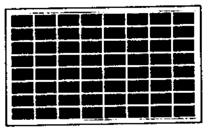
❶ Cross Hair pattern



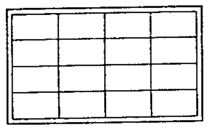
❷ Hatch pattern



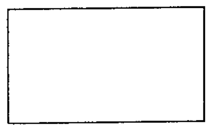
❸ Inverted Hatch pattern



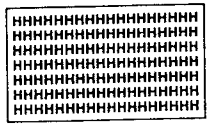
❹ Hatch (coarse) pattern



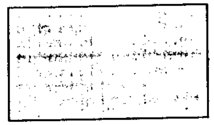
❺ Flat Field



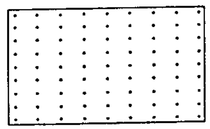
❻ H pattern



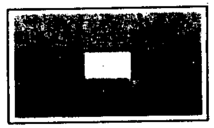
❼ Inverted H pattern



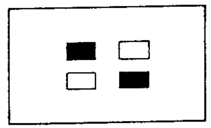
❽ Dot pattern



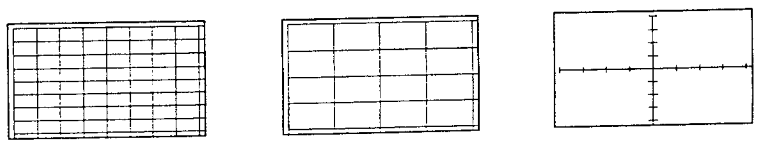
❾ Window pattern



❿ Pluge pattern



Note
In the hatch and the cross-hair patterns, the lines of the right and lower portion will cross over the ninth (fifth) lines.



Test Patterns in Each Mode

Mode		With one press of TEST key, test patterns change as follows.
No adjustment mode		Flat Field → Hatch → Inverted Hatch → H-pattern → Dot → Window → Pluge → Flat Field
FOCUS	LENS MG	H-pattern → Inverted H-pattern → Hatch → Inverted Hatch → Dot → H-pattern (Select the desired one)
Centering	R CENT B CENT	Cross hair ↔ Hatch (Select the desired one)
Registration	SIZE LIN SKEW BOW	Cross hair ↔ Hatch (Select the desired one)
	KEY PIN	Hatch (Coarse) ↔ Hatch (Select the desired one)
	ZONE	Hatch
White balance	BIAS	Pluge
	GAIN	Window ↔ Flat Field
Blanking	BLKG	Input signal → Hatch

1-11. PAGE DISPLAY

Press PAGE key for displaying the following five on-screen displays. Adjustment can also be done on PAGE 1, 2, 3 and 4. The display will switch as illustrated on the right every time PAGE key is pressed:
The displays in these illustrations are for INPUT A/B.
When in VIDEO mode, the adjustable items are slightly different.

PAGE 1 → PAGE 2 → PAGE 3 → PAGE 4 → PAGE 5 → original screen → PAGE 1

PAGE 1

```
PAGE 1                    INPUT-A
 USER PRESET
STATUS:        ON
PIC MUTE:      OFF
CLEAR BLUE:    OFF
SECAM:         ---

                     NEXT: [PAGE]
```

The STATUS ON/OFF, PIC MUTE ON/OFF, CLEAR BLUE (C.B.) ON/OFF, and SECAM ON/OFF settings are displayed.
"– – –" indicates that the control does not function with the current input signal.
To change the settings, adjust with the appropriate key.

Note
CLEAR BLUE control does not function when in VIDEO mode.

PAGE 2

```
PAGE 2                    INPUT-A
 USER CONTROL
CONTR: 80
COLOR: --
BRT:    50
SHARP: MIN
HUE:    --

                     NEXT: [PAGE]
```

The picture conditions; contrast, color, brightness, sharpness, and hue levels are displayed.
"– –" indicates that the control does not function with current input. To change the levels, adjust with PICTURE CONTROL keys.

Note
- COLOR and HUE controls function when the input signal is in VIDEO mode.
- HUE control does not function when the input signal is PAL or SECAM in VIDEO mode.

PAGE 3

```
PAGE 3                    INPUT-A
  MEMORY PRESET
    MEMORY-1    MEMORY-5
    MEMORY-2    MEMORY-6
    MEMORY-3    MEMORY-7
    MEMORY-4    MEMORY-8

             SELECT: ◄ ► ▲ ▼
             NEXT:   [PAGE]
```

The MEMORY numbers are displayed.
The selected number blinks in green.
To select the MEMORY number, press ◄, ►, ▲ and ▼ keys.

The aspect ratio of the picture (16:9 or 4:3) is factory preset for each MEMORY number:

MEMORY 1—6: aspect ratio 16:9 (for INPUT A/B)
MEMORY 7, 8: aspect ratio 4:3 (for VIDEO IN)

When the aspect ratio of the picture is 16:9, select from MEMORY 1—6. When the aspect ratio of the picture is 4:3, select MEMORY 7 or 8.

PAGE 4

```
PAGE 4                    INPUT-A
  SYSTEM PRESET
COLOR TEMPERATURE:
  HDTV1  HDTV2  VID1  VID2
INPUT SIGNAL: GBR YPbPr
COLOR SELECT:COL B&W
SYNC SOURCE: INT EXT
             SELECT: ◄ ► ▲ ▼
             NEXT:   [PAGE]
```

The following settings are displayed:
The selected number blinks in green.

COLOR TEMPERATURE:
The color temperature is set to HDTV 1, HDTV 2, VID 1 or VID 2. Each item is factory preset as follows:

HDTV 1: 6500K for aspect ratio 16:9
HDTV 2: 9300K for aspect ratio 16:9
VID 1: 6500K for aspect ratio 4:3
VID 2: 9300K for aspect ratio 4:3

When changing the setting, select the item with the aspect ratio that is appropriate for the picture to be projected.

INPUT SIGNAL: The input signal is GBR or YP_BP_R.
COLOR SELECT: The color select setting is COL (COLOR) or B&W (black & white)
SYNC SOURCE: The sync source is INT (internal) or EXT (external).

Notes
- "INPUT SIGNAL", "COLOR SELECT", and "SYNC SOURCE" are not displayed when the input signal is from VIDEO IN.
- "SYNC SOURCE" is displayed only when both internal and external sync signal are input.

To change the setting, adjust by pressing ◄, ►, ▲ and ▼ keys.

PAGE 5

```
PAGE 5                    INPUT-A
 INPUT INFO
fH :  33.7kHz
fV :  59.9Hz
H/C-SYNC:     NEG
V-SYNC:       NEG
SYNC ON G:  NEG
INPUT SIGNAL: GBR
              EXIT: [PAGE]
```

The signal input conditions are displayed.

f_H: The horizontal frequency of the input signal*
f_V: The vertical frequency of the input signal*
H/C-SYNC: The polarity of the H/C-SYNC
V-SYNC: The polarity of the V-SYNC
SYNC ON G: The polarity of the SYNC on the Green

POS: positive
NEG: negative
– – –: not input

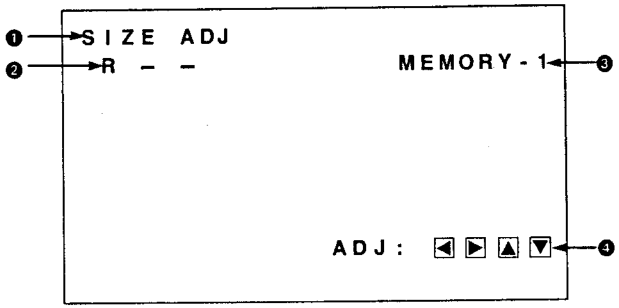
The sync signal being used is indicated in green, and the one not being used is indicated in white.

INPUT SIGNAL: The current input signal.
GBR: GBR signal from INPUT A/B
YP_BP_R: YP_BP_R signal from INPUT A/B
NTSC: NTSC signal from VIDEO IN
PAL: PAL signal from VIDEO IN
SECAM: SECAM signal from VIDEO IN
B&W: black and white signal from VIDEO IN
Y/C: Y/C signal from VIDEO IN

*The numbers are not always exact.

On-Screen Displays during Adjustments

During the registration adjustment, the following displays will appear.



❶ The adjustment mode

❷ The color to be adjusted
RGB: Green signal is being adjusted.
Note: Red and blue signals are also being adjusted.
–G–: Green signal is being adjusted.
R– –: Red signal is being adjusted
– –B: Blue signal is being adjusted

❸ The MEMORY number selected in the PAGE 3.
For details.

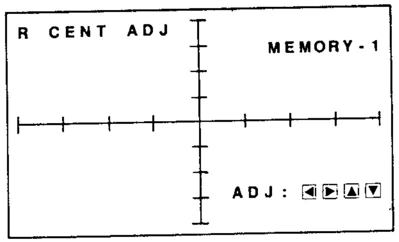
❹ The operable adjustment key

CENT (centering) Adjustment

Adjust so that each colored line converges in the middle of the screen.

Operation

1 **Press CENT R key to enter red centering adjustment mode.**
To enter blue centering adjustment mode, press CENT B key.



2 **Press CUT OFF B key to cut off blue signal.**
In blue centering adjustment mode, press CUT OFF G key to cut off green signal.

3 **Adjust moving red until it converge with the green center point with ◀, ▶, ▲ and ▼ keys.**
To adjust blue, move lines until they converge with the red center point.

Note
- When the vertical and the horizontal lines of the cross are not parallel to the frame of the screen or the hatch pattern does not fit to the screen by a large amount, it is possible that the projector and the screen are not installed correctly. (e.g. The floor is not flat.)
In this case, before adjusting with the Commander, move the projector and the screen to get the best possible condition.
- You can enter the green centering adjustment mode by pressing the CENT R and CENT B keys simultaneously, however, we recommend not adjust green centering. Since doing so may cause unproper projection.

1-15. REGISTRATION ADJUSTMENT

Display the test pattern on the screen and adjust the registration.
First perform the green adjustments and then red and then the blue adjustments.

Procedure

Connect the desired input signal and select it on the Commander.

↓

Green
Press ADJ G key to select green signal.
Press CUT OFF R and B keys to cut off red and blue signal.

SIZE ◄► LIN → SKEW ◄► BOW → KEY ◄► PIN → ZONE

↓

Red
Press ADJ R key to select red signal.
Press CUT OFF B key to cut off blue signal.
Make the red lines converge with the green lines.

CENT → SIZE ◄► LIN → SKEW ◄► BOW → KEY ◄► PIN → ZONE

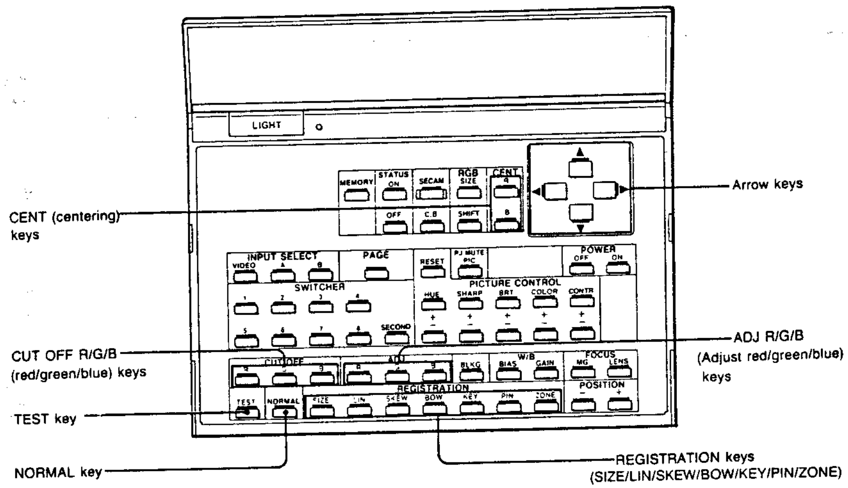
↓

Blue
Press ADJ B key to select blue signal.
Press CUT OFF G to cut off green signal.
Make the blue lines converge with the red lines.
(It is also possible to cut off red signal and make the blue lines converge with the green lines)

CENT → SIZE ◄► LIN → SKEW ◄► BOW → KEY ◄► PIN → ZONE

◄► : Go back and forth between two keys.

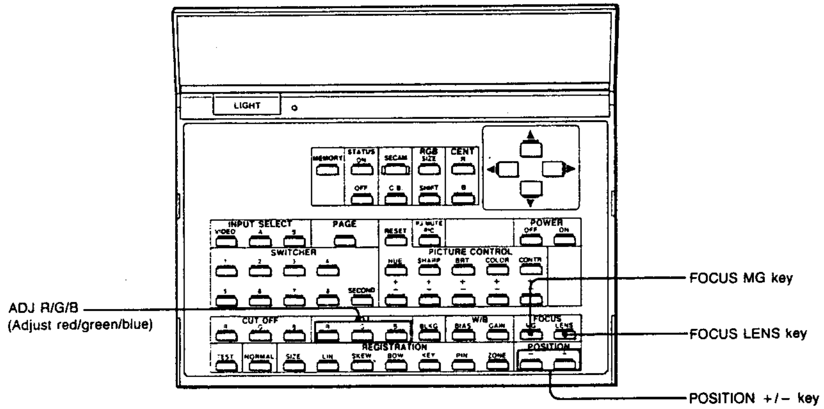
Keys for Registration Adjustments



1-14. FOCUS ADJUSTMENT

There are two steps of focus adjustment, lens focus adjustment and magnetic focus adjustment.
First perform lens focus and then, magnetic focus and go back and forth between the two adjustments.

Keys for Focus Adjustment



Note
When the vertical and the horizontal lines of the cross are not parallel to the frame of the screen or the hatch pattern does not fit to the screen by a large amount, it is possible that the projector and the screen are not installed correctly. (e.g. The floor is not flat.)
In this case, before adjusting with the Commander, move the projector and the screen to get the best possible condition.

Lens Focus Adjustment

1 **Press FOCUS LENS key to enter lens focus adjustment mode.**

```
LENS FOCUS ADJ
 - G -



                     ADJ :
```

2 **Press ADJ G key to select green signal.**

3 **Adjust the center focus with ◄ and ► keys.**

4 **Press ADJ R key to select red signal.**
Adjust the red lens focus in the same way.

5 **Press ADJ B key to select blue signal.**
Adjust the blue lens focus in the same way.

Magnetic Focus Adjustment

1 **Press FOCUS MG key to enter the magnetic focus adjustment mode.**

```
MG FOCUS ADJ
 G-ALL                MEMORY-1



A:120
V: 95                 ADJ:  ◀▶
H:100                 NEXT: +−
```

A: The adjusted data of the center focus
V: The adjusted data of the upper and the bottom focus
H: The adjusted data of the right and left focus

2 **Press ADJ G key to select green signal.**

3 **Adjust the center focus with ◀ and ▶ keys.**
The display on the upper left: G-ALL

4 **Press POSITION + key.**
Adjust the upper and lower focus with ◀ and ▶ keys.
During this adjustment the center focus will not be changed.
The display on the upper left: G-V

5 **Press POSITION + key.**
Adjust the left and right focus with ◀ and ▶ keys.
During this adjustment the center focus will not be changed.
The display on the upper left: G-H

```
MG FOCUS ADJ
 R-ALL                MEMORY-1



A:120
V: 95                 ADJ:  ◀▶
H:100                 NEXT: +−
```

6 **Press ADJ R key to select red signal.**
Adjust the red magnetic focus in the same way.

7 **Press ADJ B key to select blue signal.**
Adjust the blue magnetic focus in the same way.

8 **If necessary, perform the lens focus adjustment again and go back to the magnetic focus again.**

Note
When the vertical and the horizontal lines of the cross are not parallel to the frame of the screen or the hatch pattern does not fit to the screen by a large amount, it is possible that the projector and the screen are not installed correctly (e.g. The floor is not flat.)
In this case, before adjusting with the Commander, move the projector and the screen to get the best possible condition.

Selecting Data MEMORY Number

1 **Press PAGE key three times.**
The Page 3 display will appear.

```
PAGE 3                 INPUT-A
  MEMORY PRESET
     MEMORY-1    MEMORY-5
     MEMORY-2    MEMORY-6
     MEMORY-3    MEMORY-7
     MEMORY-4    MEMORY-8

              SELECT: ◀▶▲▼
              NEXT:   [PAGE]
```

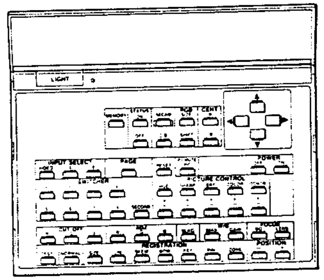
2 **Select the desired MEMORY number (MEMORY 1—8) with the four arrow keys.**

Your projection aspect ratio is 16:9 .... Select from MEMORY 1, 2, 3, 4, 5 and 6.
Your projection aspect ratio is 4:3 .... Select MEMORY 7 or 8.
The adjusted data will be stored in the MEMORY number selected in this step.

3 **Press PAGE key three times to return to the original screen.**

Making the Adjustments Keys Operable

The keys in the colored portion in the illustration are usually inoperable in order to prevent the users from changing the registration adjustments.
So before proceeding the adjustments, you must cancel the protect function.



1 **Press TEST key for at least 5 seconds.**
The display will appear.

```
Do you wish to enter into
the SERVICEMAN CONTROL MODE?



                       YES:▲
                       NO: ▼
```

2 **Press ▲ key.**
All the keys are now operable.

1-12. ADJUSTMENT PROCEDURE

Perform each adjustment with the Remote Commander for each input signal.
Follow the steps.

Connection of input signal

↓

Settings for adjustment
- Select input signal
- Select MEMORY number
- Make the adjustment keys operable

↓

Focus adjustment

↓

Registration adjustment

↓

White balance adjustment (if necessary)

↓

RGB size, shift and blanking adjustments

↓

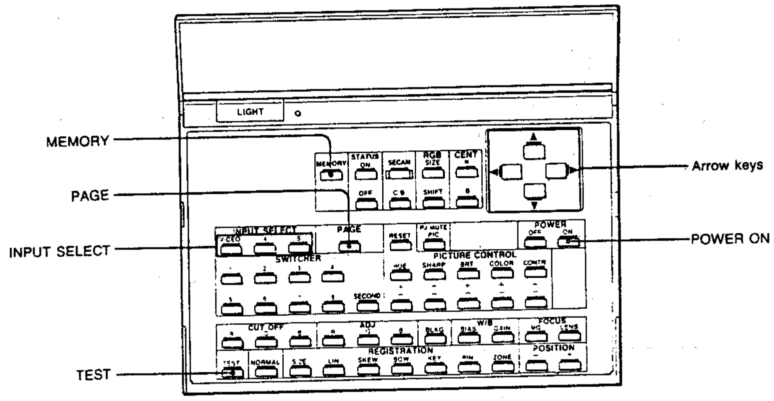
Memory of adjustment data

↓

Making the adjustment keys inoperable

1-13. SETTINGS FOR ADJUSTMENTS

Keys for Adjustments



Selecting Input Signal

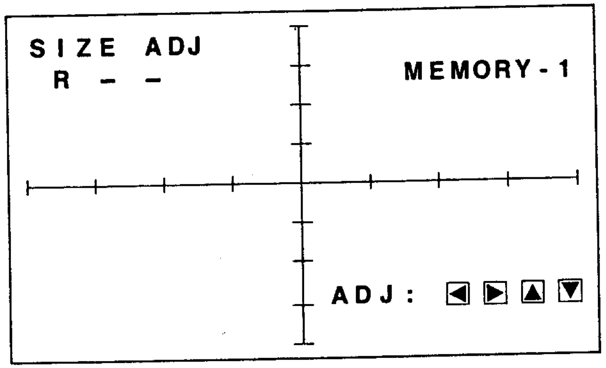
1 Turn on the MAIN POWER switch on the set and press POWER ON key on the Commander.

2 Press INPUT A, INPUT B or VIDEO key on the Commander to select the input signal.

SIZE Adjustment

Adjust the size of the displayed picture with respect to the screen.
Pay attention to the upper, low, right and left sides of the screen.

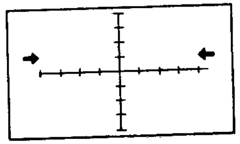
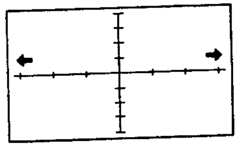
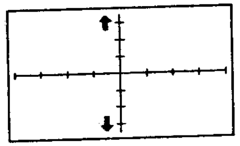
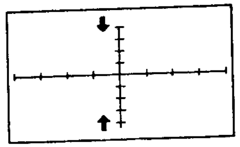
1 **Press SIZE key to enter size adjustment mode.**
If TEST key is pressed, the screen display will become hatch pattern.



2 **Select the color to be adjusted with ADJ R, G or B keys.**

3 **If you want to cut off a color, use CUT OFF R, G or B key.**
To restore the color, press the CUT OFF key again.

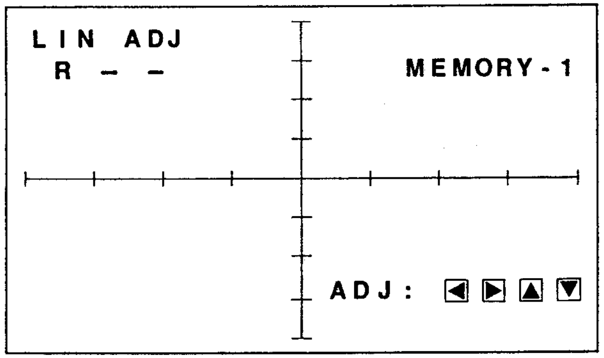
4 **Adjust with ◄, ►, ▲ and ▼ keys.**

Key	Adjustment	
◄	Horizontal size To reduce	
►	Horizontal size To expand	
▲	Vertical size To expand	
▼	Vertical size To reduce	

LIN (linearity) Adjustment

After preliminary vertical and horizontal size adjustment is completed, adjust the unbalanced size with this linearity adjustment. You may need to go back to the size adjustment again.

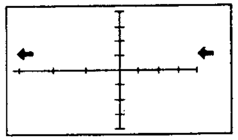
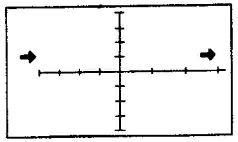
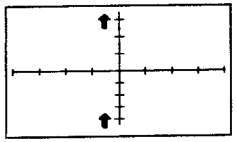
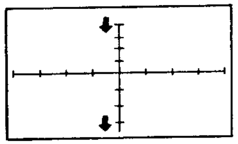
1 **Press LIN key to enter the linearity adjustment mode.**
If TEST key is pressed, the screen display will become hatch pattern.



2 **Select the color to be adjusted with ADJ R, G or B keys.**

3 **If you want to cut off a color, use CUT OFF R, G or B key.**
To restore the color, press the CUT OFF key again.

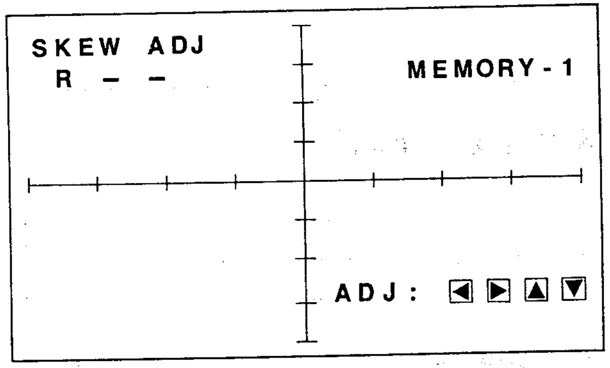
4 **Adjust with ◄, ►, ▲ and ▼ keys.**

◄	The right and left vertical lines are shifted to the left while the vertical center line of the displayed picture remains unchanged.	
►	The right and left vertical lines are shifted to the right while the vertical center line of the displayed picture remains unchanged.	
▲	The top and bottom horizontal lines are shifted upward while the horizontal center lines of the displayed picture remains unchanged.	
▼	The top and bottom horizontal lines are shifted downward while the horizontal center lines of the displayed picture remains unchanged.	

SKEW Adjustment

Adjust the horizontal and vertical center lines.

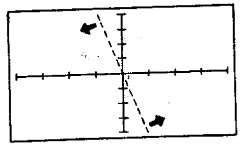
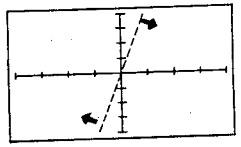
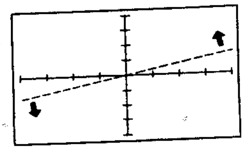
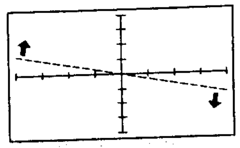
1 **Press SKEW key to enter the skew adjustment mode.**
If TEST key is pressed, the screen display will become hatch pattern.



2 **Select the color to be adjusted with ADJ R, G or B keys.**

3 **If you want to cut off a color, use CUT OFF R, G or B key.**
To restore the color, press the CUT OFF key again.

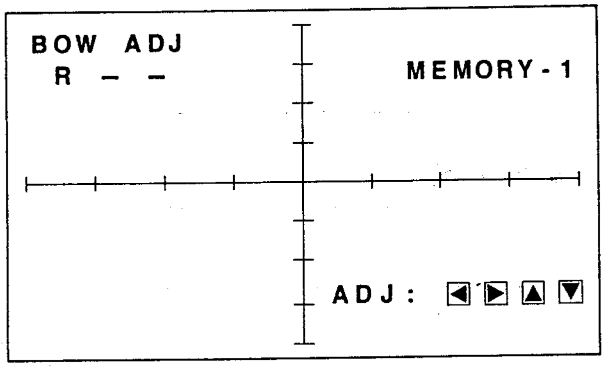
4 **Adjust with ◀, ▶, ▲ and ▼ keys.**

Key	Result	Diagram
◀	The cross center vertical line leans leftward.	
▶	The cross center vertical line leans rightward.	
▲	The cross center horizontal line leans toward upper right.	
▼	The cross center horizontal line leans toward lower right.	

BOW Adjustment

Adjust the bow-like distortion of the center cross.

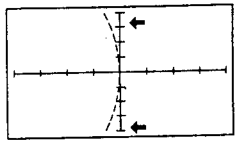
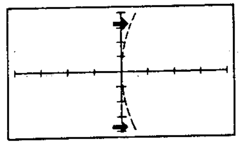
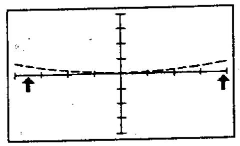
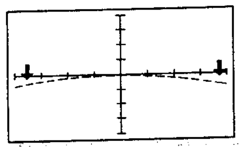
1 **Press BOW key to enter the bow adjustment mode.**
If TEST key is pressed, the screen display will become hatch pattern.



2 **Select the color to be adjusted with ADJ R, G or B keys.**

3 **If you want to cut off a color, use CUT OFF R, G or B key.**
To restore the color, press the CUT OFF key again.

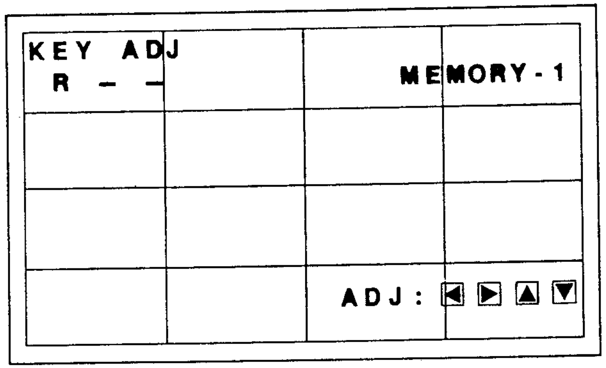
4 **Adjust with ◀, ▶, ▲ and ▼ keys.**

Key	Description	Diagram
◀	The vertical lines are curved leftward.	
▶	The vertical lines are curved rightward.	
▲	The horizontal lines curved upward.	
▼	The horizontal lines curved downward.	

KEY (Keystone) Adjustment

Adjust the trapezoidal distortion in the vertical and horizontal directions.

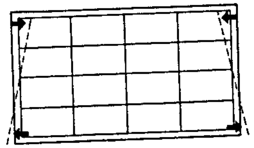
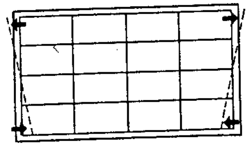
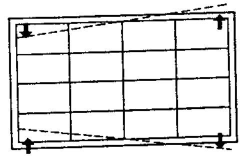
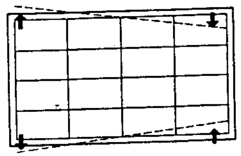
1 **Press KEY key to enter the keystone adjustment mode.**
If TEST key is pressed, the screen display will become fine hatch pattern.



2 **Select the color to be adjusted with ADJ R, G or B keys.**

3 **If you want to cut off a color, use CUT OFF R, G or B key.**
To restore the color, press the CUT OFF key again.

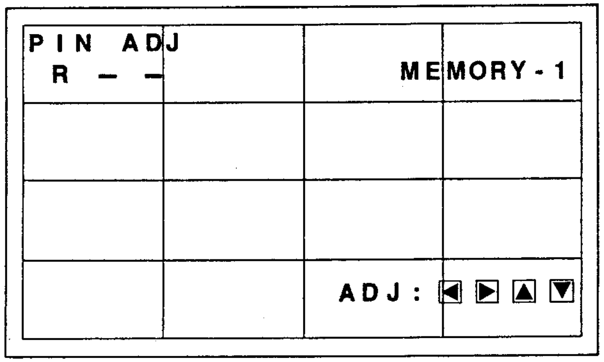
4 **Adjust with ◄, ►, ▲ and ▼ keys.**

Key	Effect	
◄	The vertical lines of bottom side expand.	
►	The vertical lines of top side expand.	
▲	The horizontal lines of right side expand.	
▼	The horizontal lines of left side expand.	

PIN (Pincushion) Adjustment

Adjust the pincushion distortion of all the sides.

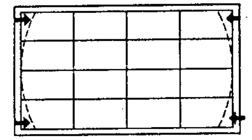
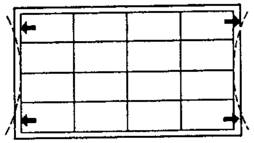
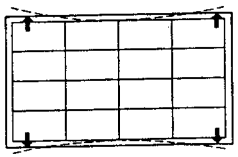
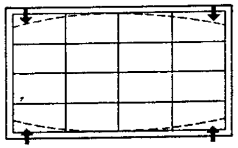
1 **Press PIN key to enter the PIN adjustment mode.**
If TEST key is pressed, the screen display will become fine hatch pattern.



2 **Select the color to be adjusted with ADJ R, G or B keys.**

3 **If you want to cut off a color, use CUT OFF R, G or B key.**
To restore the color, press the CUT OFF key again.

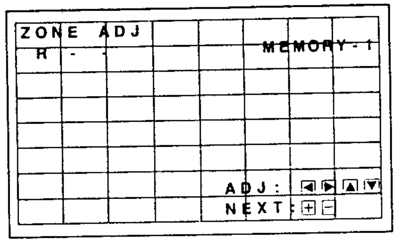
4 **Adjust with ◀, ▶, ▲ and ▼ keys.**

Key	Description	
◀	The right and left side lines are curved like a barrel.	
▶	The right and left side lines are curved like a bobbin.	
▲	The top and bottom lines are curved like a bobbin.	
▼	The top and bottom lines are curved like a barrel.	

ZONE Adjustment

Adjust the lines in each zone.

1 **Press ZONE key to enter zone adjustment mode.**
The hatch pattren and the cursor will appear.

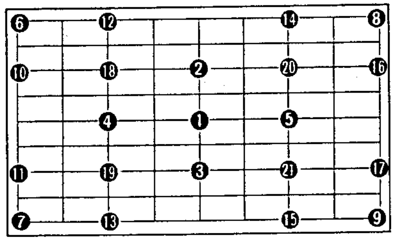


2 **Select the color to be adjusted with ADJ R, G or B keys.**

3 **If you want to cut off a color, use CUT OFF R, G or B key.**
To restore the color, press the CUT OFF key again.

4 **Press POSITION keys to select the zone to be adjusted.**

+: The cursor moves sequentially forward
−: The cursor moves sequentially in reverse.



5 **Adjust the distortion in the cursor position with ◀, ▶, ▲ and ▼ keys.**

After adjusting green signal, perform red and blue adjustment.
This adjustment is the last of the registration adjustments.

1-16. WHITE BALANCE ADJUSTMENT

Before Adjustment

You can store one of four different color temperature data into the HDTV1, HDTV2, VID1 and VID2 positions.
The data is preset at factory as follows.

HDTV1: Aspect ratio 16:9 color temperature 6500K
HDTV2: Aspect ratio 16:9 color temperature 9300K
VID1: Aspect ratio 4:3 color temperature 6500K
VID2: Aspect ratio 4:3 color temperature 9300K

Normally adjusting the white balance is unnecessary.

However, if you wish to set the color temperature at your own level, you will need to adjust the white balance. To perform the white balance adjustment, first display PAGE 4 by pressing PAGE key, and select the desired position by pressing the arrow keys.
Then follow the steps to perform the adjustment.
After the adjustment is done, store the data.

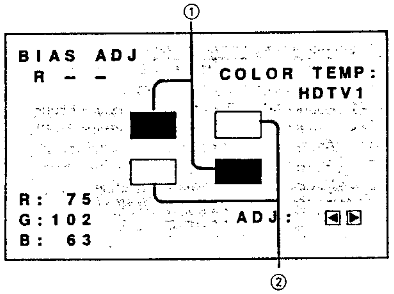
```
PAGE 4                         INPUT-A
 SYSTEM PRESET
COLOR TEMPERATURE
 HDTV1 HDTV2  VID1  VID2
INPUT SIGNAL:  GBR  YPBPR
COLOR SELECT:  COL  B&W
SYNC SOURCE:   INT  EXT

          SELECT: ◀ ▶ ▲ ▼
          NEXT: [PAGE]
```

To adjust white balance, both BIAS adjustment and GAIN adjustment must be performed repeatedly.
Normally adjustments is performed with the test patterns, but if desired, you can show an input signal display by pressing TEST key for about 3 seconds.

BIAS Adjustment

1 **Press W/B BIAS key to enter the BIAS adjustment mode.**
The pluge pattern will appear.

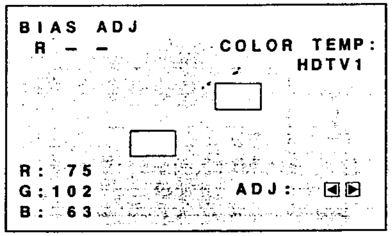


2 **Press ADJ R, G and B key to select color to be adjusted.**

3 **Adjust with ◀ or ▶ keys.**

◀ . . . . . Less brightness
▶ . . . . . More brightness

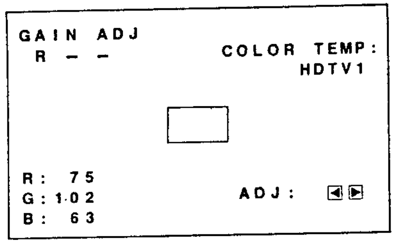
Make part 1 as dark as possible, so that the black of the background and part 1 look the same.
Part 2 should be slightly brighter than the background.



Note
When the on-screen display disturbs the adjustment setting, press STATUS OFF key and erase the display.
After the adjustments is completed, press STATUS ON key to have the display appear on the screen again.

GAIN adjustment

1 **Press W/B GAIN key to enter the GAIN adjustment mode.**
The window pattern will appear.



Adjusted data for each color

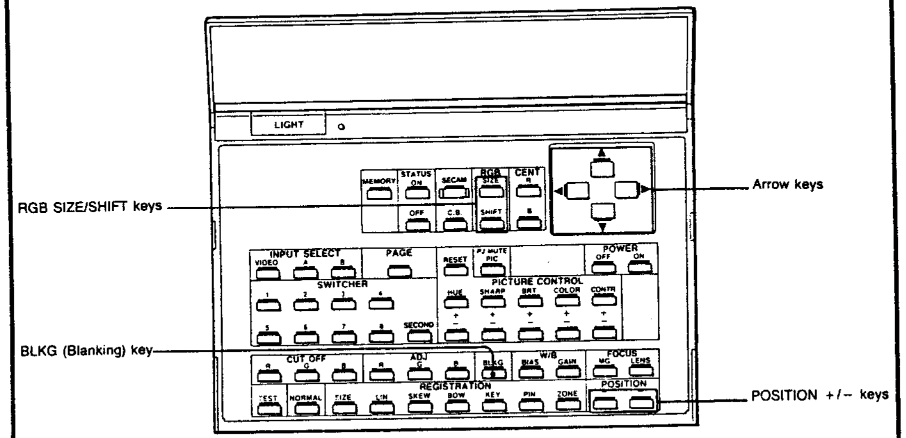
2 **Press ADJ R, G and B key to select color to be adjusted.**

3 **Adjust with ◀ or ▶ keys until the ☐ portion becomes white.**

◀ . . . . Less bright
▶ . . . . Brighter

1-17. OTHER ADJUSTMENT

Keys for Other Adjustments



RGB SIZE adjustment

If size of the picture input from INPUT A or B does not fit the screen, adjust RGB SIZE.

1 **Press RGB SIZE key to enter RGB SIZE adjustment mode.**

```
RGB SIZE ADJ



                ADJ : ◄►▲▼
```

2 **Adjust with arrow keys so that the picture fits the screen.**

- ◄ to reduce horizontal size
- ► to expand horizontal size
- ▲ to expand vertical size
- ▼ to reduce vertical size

Notes

- This adjustment does not function with input signal from VIDEO IN connectors.
- TEST key does not function in this adjustment mode.

RGB SHIFT adjustment

If the picture input from INPUT A or B needs to be shifted to fit the screen, adjust RGB SHIFT.

1 **Press RGB SHIFT key to enter the RGB SHIFT adjustment mode.**

```
RGB SHIFT ADJ



                    ADJ : ◀▶▲▼
```

2 **Adjust with arrow keys so that the picture fits the screen.**
The picture shifts according to the direction of the arrow.

Notes
- This adjustment does not function with input signal from VIDEO IN connectors.
- TEST key does not function in this adjustment mode.

BLKG (Blanking) Adjustment

If you wish to cut the portion of picture that is bigger than the screen, perform this adjustment.

1 **Press BLKG key to enter the blanking adjustment mode.**
Input signal picture will appear. If TEST key is pressed, the screen display will become hatch pattern.

```
BLKG ADJ
 UPPER                 MEMORY-1



                   ADJ : ▲▼
                  NEXT : ⊞⊟
```

2 **Press POSITION +/− key to select the position to be cut off.**
The position to be cut off will change as follows.

+: UPPER→LOWER→LEFT→RIGHT
−: In reverse order

```
BLKG ADJ
 RIGHT                 MEMORY-1

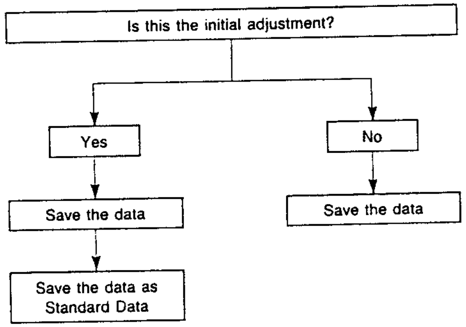


                   ADJ : ◀▶
                  NEXT : ⊞⊟
```

3 **To adjust UPPER and LOWER: Adjust with ▲ or ▼ key.**
To adjust LEFT and RIGHT: Adjust with ◀ or ▶ key.

1-18. MEMORY OF ADJUSTMENTS DATA

After adjustments you need to save the adjustment data. After the initial adjustment, you must perform 2 steps to save the data.



How to save the data

After adjustments, press MEMORY key.
(Please do not keep pressing.)
The adjustment data of the input signal will be saved. During saving other keys cannot be operable.

```
MEMORY DATA
in saving!

No key may be applicable
during the indication of
this mode.
```

⇨

```
MEMORY DATA
saving is
complete!
```

How to save the data as Standard Data

If the adjusted data in a selected MEMORY number on PAGE 4 display is saved as Standard Data, the adjusted data for all MEMORY numbers will be calculated and changed to reflect the new registration information.

The difference between the factory preset data and the initial adjustment data will be put into all MEMORY numbers.

1 **After saving the data, keep pressing MEMORY key for more than 3 seconds to enter the Standard Data saving mode.**

```
The registration data
will be used as standard
for MEMORY-1-MEMORY-8
OK?

YES : ▲
NO  : ▼
```

2 **Press ▲ key.**
e.g. You have performed adjustments in MEMORY 1 and saved the data as Standard Data.

▪ ***Before adjustment***

	MEMORY 1 – –	– – MEMORY 6	MEMORY 7	MEMORY 8
Adjustment data	A	A	B	B
Factory preset data	A	A	B	B

•Factory preset: MEMORY 1—6 are the same data. Aspect ratio: 16:9
MEMORY 7, 8 are the same data. Aspect ratio: 4:3
•Before adjustment "Adjustment data" is the same as "Factory preset data".

▪ ***After adjustment in MEMORY 1***

	MEMORY 1 – –	– – MEMORY 6	MEMORY 7	MEMORY 8
Adjustment data	A'	A	B	B
Factory preset data	A	A	B	B

▪ ***After saving as Standard data***
The difference between A' and A is calculated and put into all MEMORY numbers.
The data of MEMORY 1—6 are the same and the data of MEMORY 7 and 8 are the same.

	MEMORY 1 – –	– – MEMORY 6	MEMORY 7	MEMORY 8
Adjustment data	A'	A'	B'	B'
Factory preset data	A	A	B	B

Note
Never save Standard Data when you want to keep the previous adjustment data in each MEMORY number.

1-19. MAKING THE ADJUSTMENT KEYS INOPERABLE

When you turn off the set, the adjustments keys become inoperable in order to prevent the users from changing the registration adjustments.
It is also possible to make the keys inoperable while the power is on in the following way.

1 **Press NORMAL key for at least 3 seconds.**
The display will appear.

```
Do you wish to return to
the USER CONTROL MODE?

                    YES: ▲
                    NO : ▼
```

2 **Press ▲ key.**
The adjustment keys are now inoperable.

1-20. DATA RESET

When you want to make the adjustment data reset to the previous data or factory preset data, perform the following steps.

Previous Data Reset

When you have not saved the data, the adjusting data will be reset to the previously saved data.

1 **Enter the adjustment mode of the data to be reset.**
e.x. If you want to reset red size adjustment, press SIZE and ADJ R keys.

2 **Press ◀ and ▶ keys simultaneously.**

```
SIZE ADJ
 R - -

REGISTRATION RED
DATA RESET MODE
Do you wish to return to
previously saved data?

                    YES: ▲
                    NO : ▼
```

3 **Press ▲ key.**
Data reset will be executed. If you want to cancel data reset, press ▼ key.
If you press neither of the keys, data reset mode will be cancelled after 15 seconds.

Factory Data Reset

When you have already saved the data, the adjusted data will be reset to the factory preset data.

1 **Enter the adjustment mode of the data to be reset.**

e.x. If you want to reset red zone adjustment, press ZONE and ADJ R keys.

2 **Press ◀ and ▶ keys simultaneously.**

```
ZONE ADJ
 R - -

ZONE
DATA RESET MODE
Do you wish to return to
factory preset data?

                    YES: ▲
                    NO:  ▼
```

3 **Press ▲ key.**
Data reset will be executed. If you want to cancel data reset, press ▼ key.
If you press neither of the keys, data reset mode will be cancelled after 15 seconds.

Mode and Data Reset Correspondence

Adjustment mode	Data to be reset	Previous data reset	Factory preset data reset
RGB SIZE	All the data for RGB size	No	Yes
RGB SHIFT	All the data for RGB shift	No	Yes
R CENT	No data reset mode.		
B CENT	No data reset mode.		
G CENT	All the centering data for all colors	No	Yes
SIZE, LIN, SKEW, BOW, KEY, PIN	All the registration data for the selected color (including the Zone data)	Yes	Yes
ZONE	All the Zone data for the selected color	Yes	Yes
W/B BIAS	All the W/B bias and gain data for all colors	Yes	Yes
W/B GAIN	All the W/B bias and gain data for all colors	Yes	Yes
MG FOCUS	All the magnetic focus data for the selected color	Yes	Yes
LENS FOCUS	No data reset mode.		

Yes: Possible
No: Impossible

1-21. FOR REFERENCE– THE MEMORY ARCHITECTURE

The memory structure is divided into four parts; two CHANNEL MEMORY, REGISTRATION MEMORY and W/B (white balance) MEMORY.

MEMORY name	MEMORY data	How the projector recognizes data	When data is memorized
CHANNEL MEMORY 1	Picture control PIC COLOR BRT SHARP HUE	Input connector INPUT A INPUT B VIDEO	•When input channel is switched •When the power is turned off with the Commander
CHANNEL MEMORY 2	RGB SIZE RGB SHIFT PAGE 3 MEMORY number (MEMORY 1—8) PAGE 4 •Color temperature select number (HDTV1, HDTV2, VID1, VID2) •Input signal selection (GBR/YPBPR) •COLOR selection (COL/B&W) •Sync source selection (INT/EXT) SECAM ON/OFF C.B. ON/OFF	Input connector INPUT A INPUT B VIDEO	•When MEMORY key is pressed •When the power is turned off with the Commander
REGISTRATION MEMORY	CENT Registration (SIZE, LIN, SKEW, BOW, KEY, PIN, ZONE) MG FOCUS BLKG	MEMORY number selected in PAGE 3 (MEMORY 1—8)	•When input channel is switched •When MEMORY key is pressed •When MEMORY number is switched in PAGE 3 •When the power is turned off with the Commander
WHITE BALANCE MEMORY	White balance BIAS/GAIN	Color temperature select number selected in PAGE 4 (HDTV1, HDTV2, VID1, VID2)	•When input channel is switched •When MEMORY key is pressed •When color temperature select number is switched in PAGE 4 •When the power is turned off with the Commander

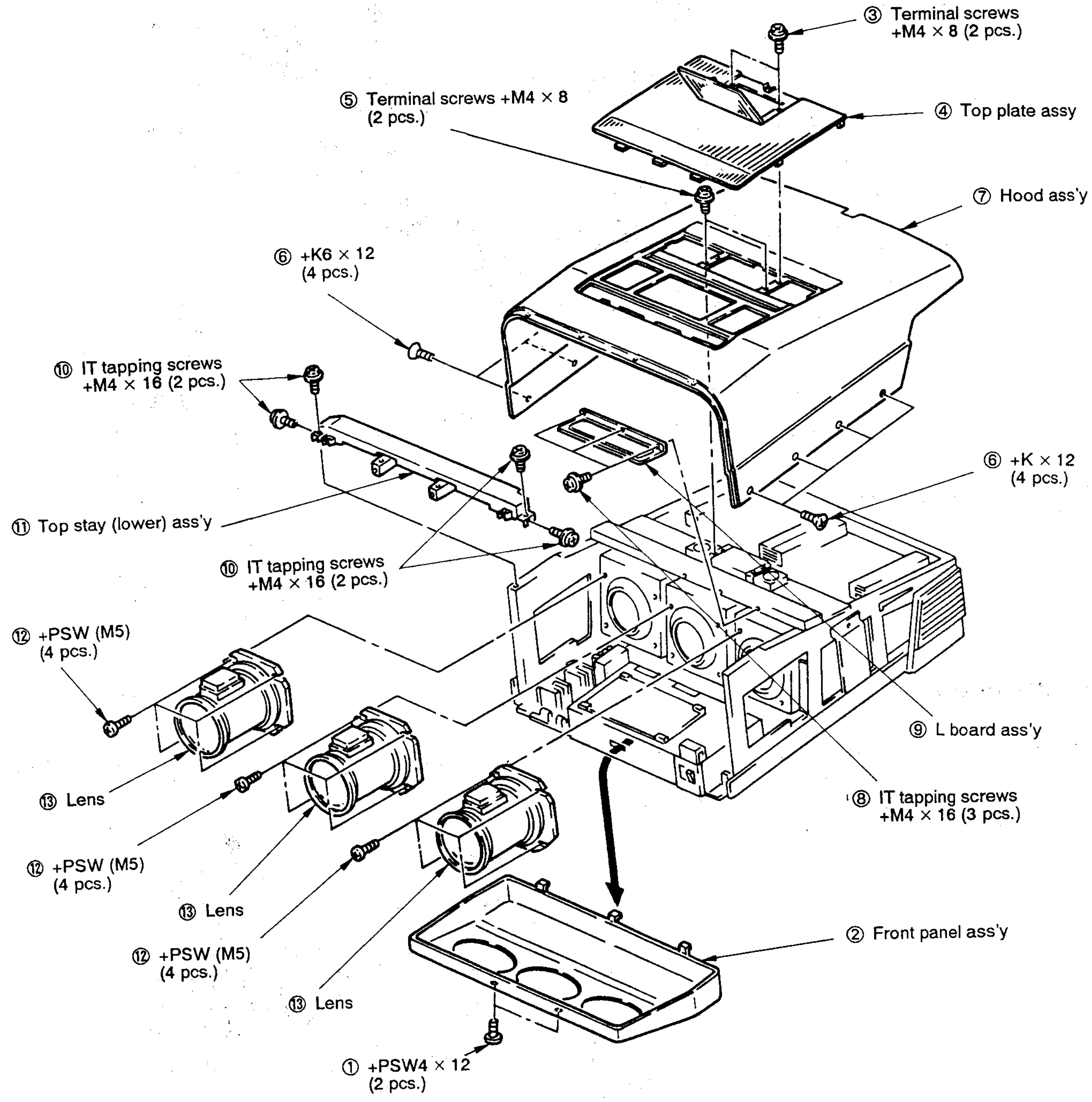
Notes

- The data of CHANNEL MEMORY 2 cannot be saved when the input channel is switched, never fail to press MEMORY key after adjustment or setting.
- When the power is turned off on the Commander, all the data is saved and when the power is turned on again, the data will be recovered.
- Turn off the main power on the set after turning off the power on the Commander, unless the data will not be saved.

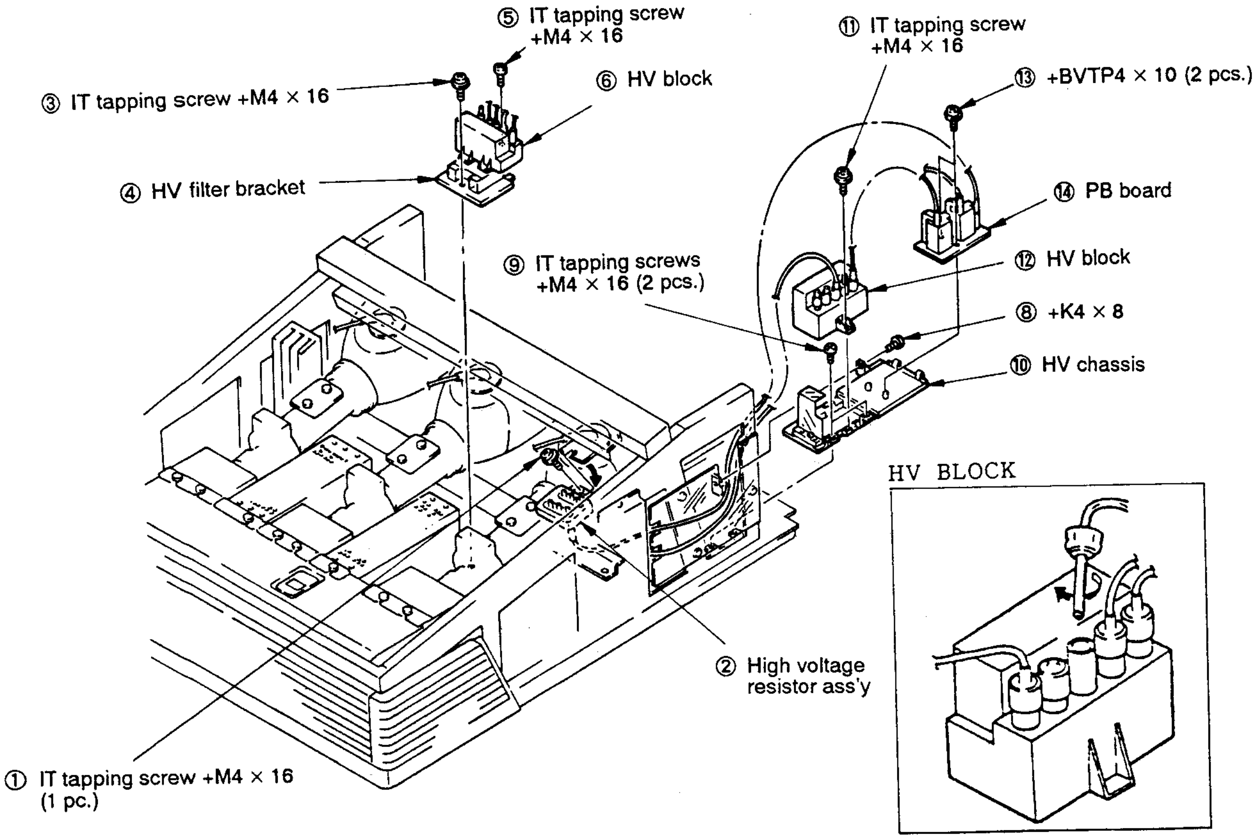
MEMO

SECTION 2
DISASSEMBLY

2-1. LENS REMOVAL



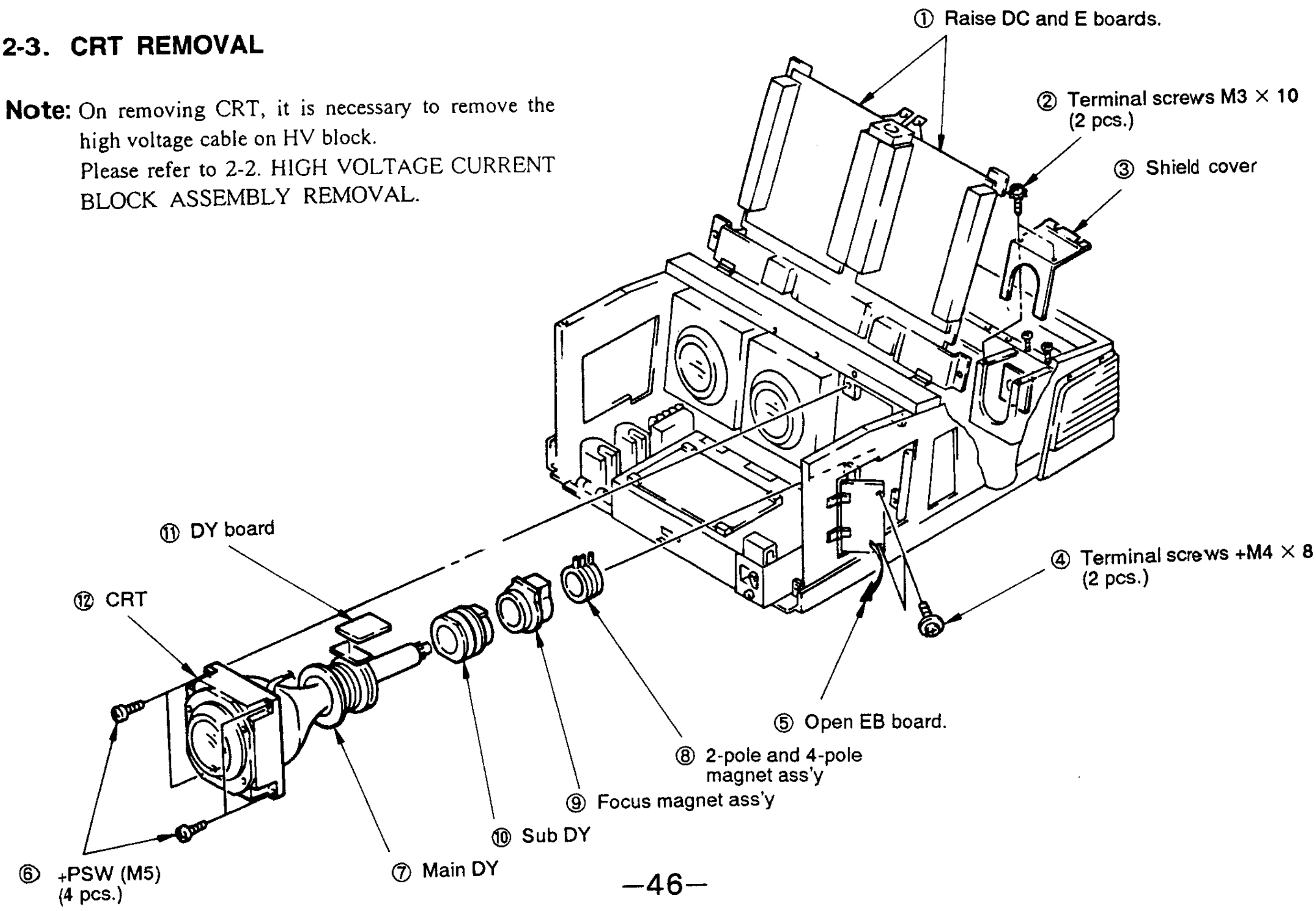
2-2. HIGH VOLTAGE CURRENT BLOCK ASSEMBLY REMOVAL



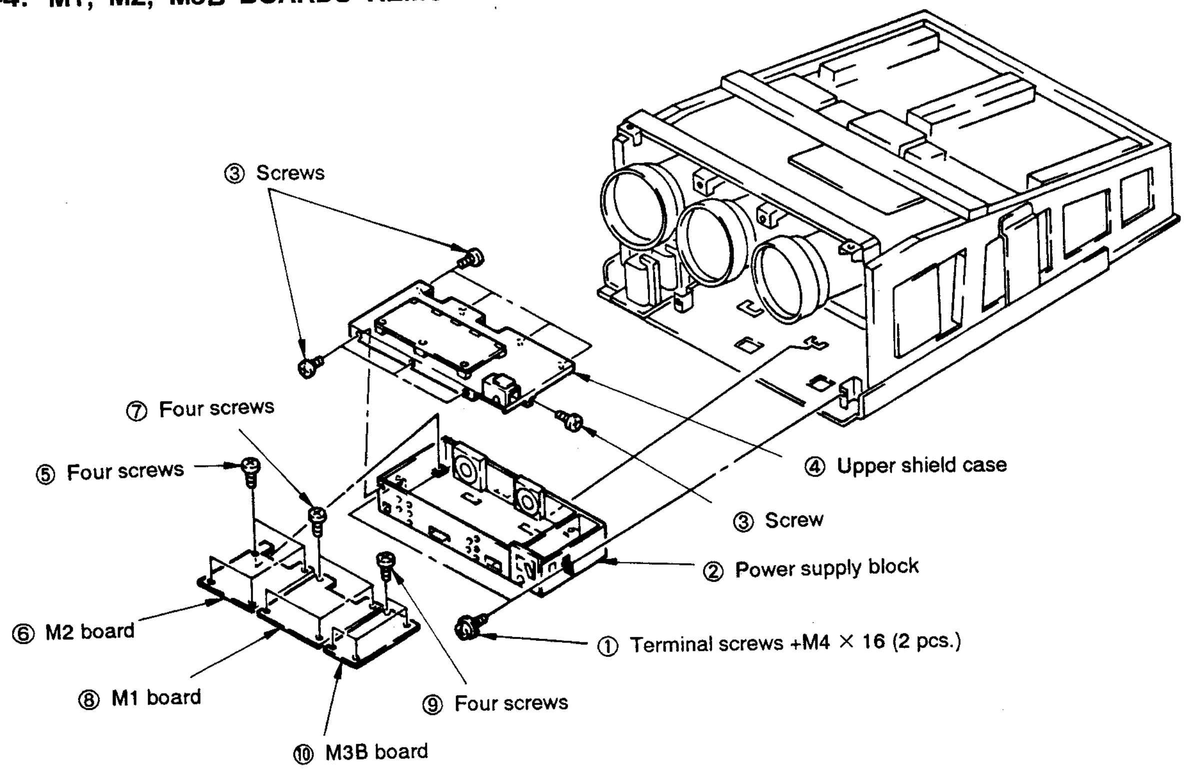
⑦ High voltage cable removal
Pull out the cable while pushing by turning 90° counterclockwise.

2-3. CRT REMOVAL

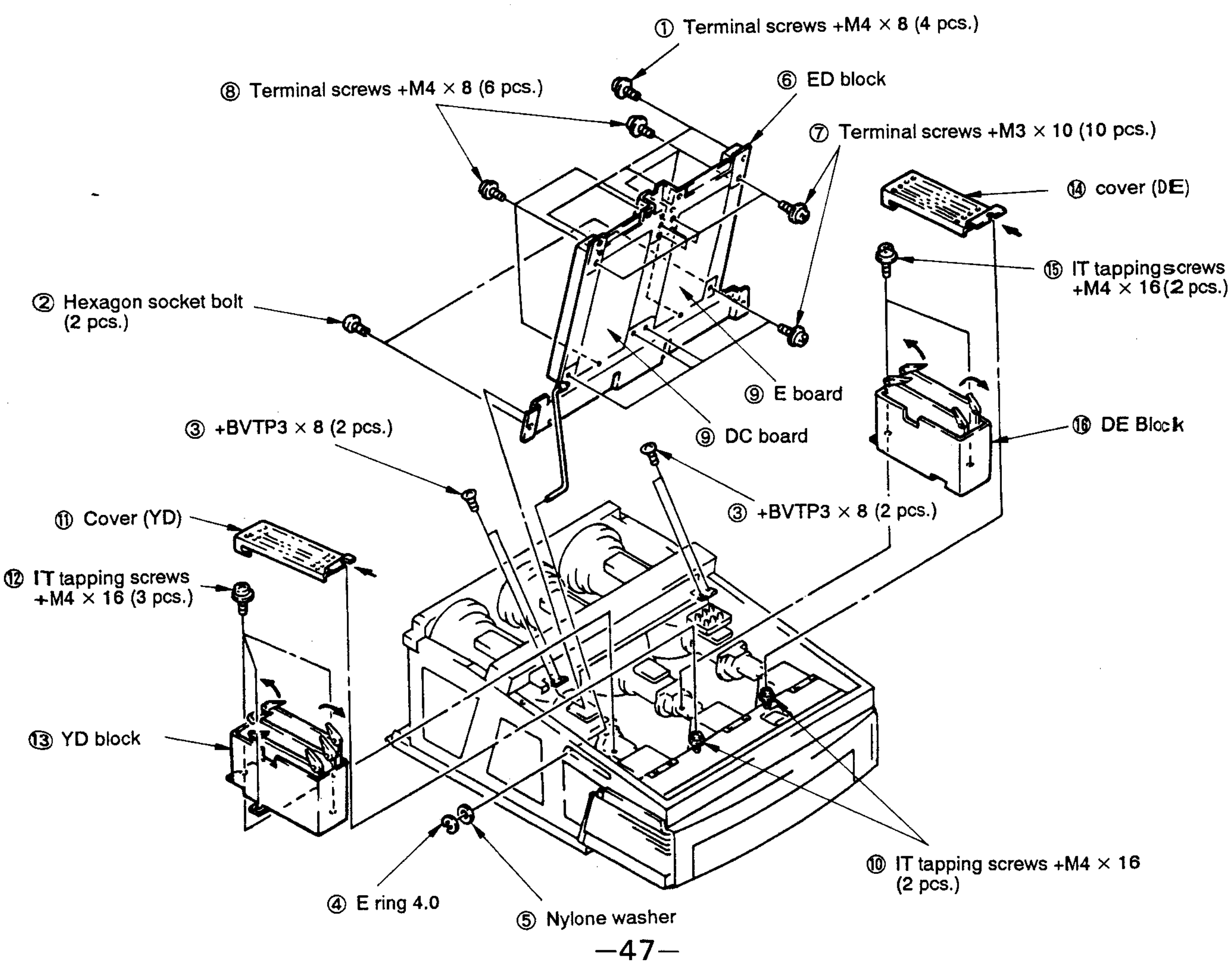
Note: On removing CRT, it is necessary to remove the high voltage cable on HV block.
Please refer to 2-2. HIGH VOLTAGE CURRENT BLOCK ASSEMBLY REMOVAL.



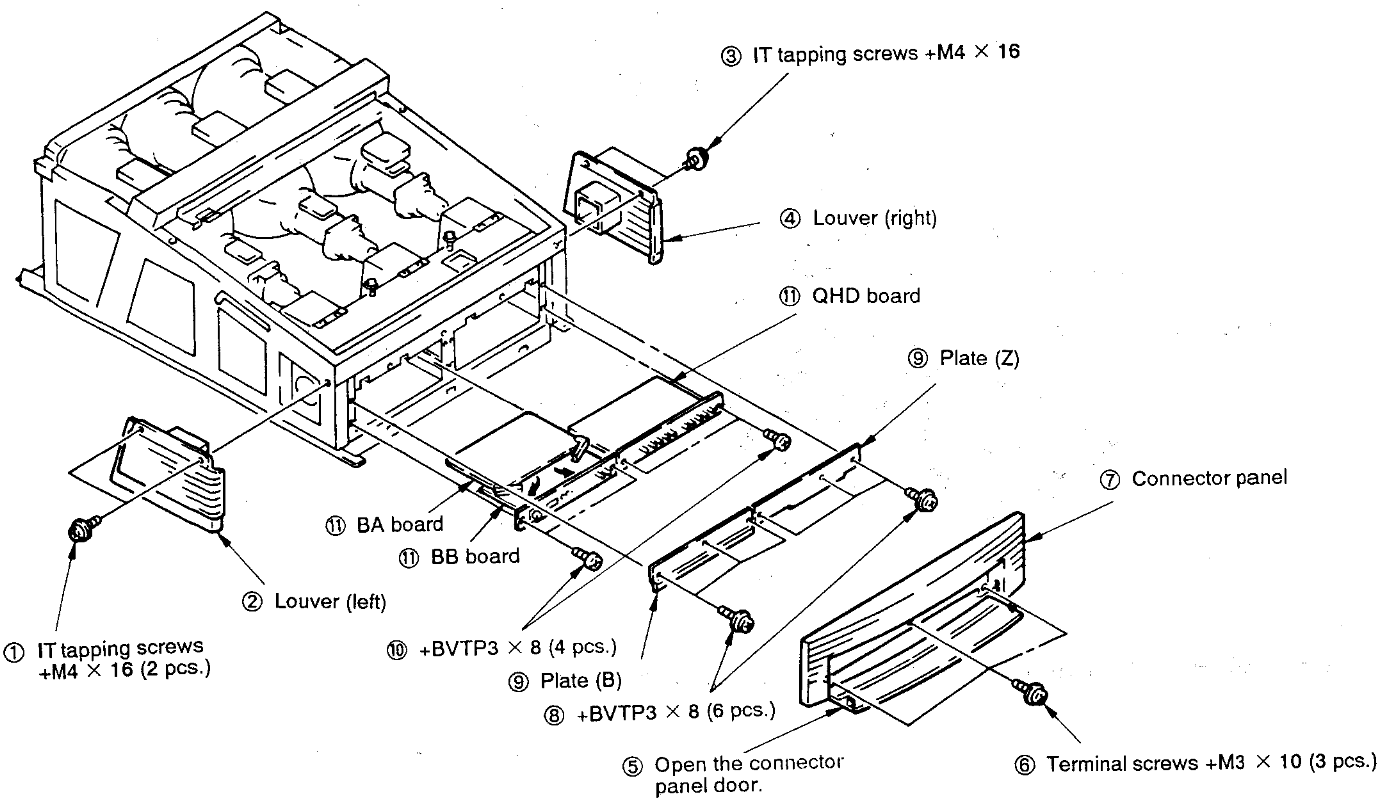
2-4. M1, M2, M3B BOARDS REMOVAL



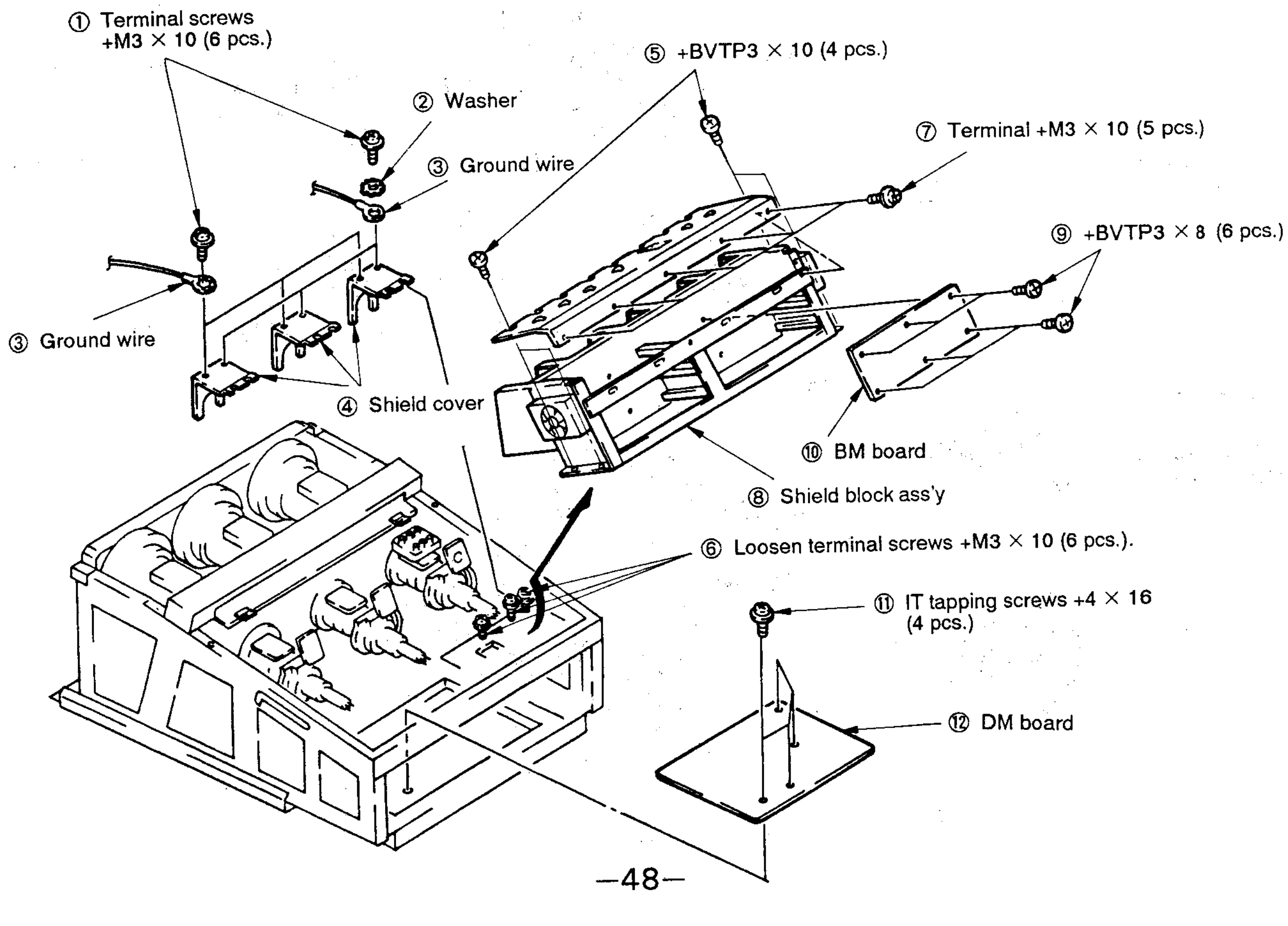
2-5. ED BLOCK ASSEMBLY, YD BLOCK, DE BLOCK REMOVAL



2-6. BA, BB, QHD BOARDS REMOVAL



2-7. BM, DM BOARDS REMOVAL



SECTION 3
CIRCUIT DESCRIPTIONS

3-1. CIRCUIT BOARD BA

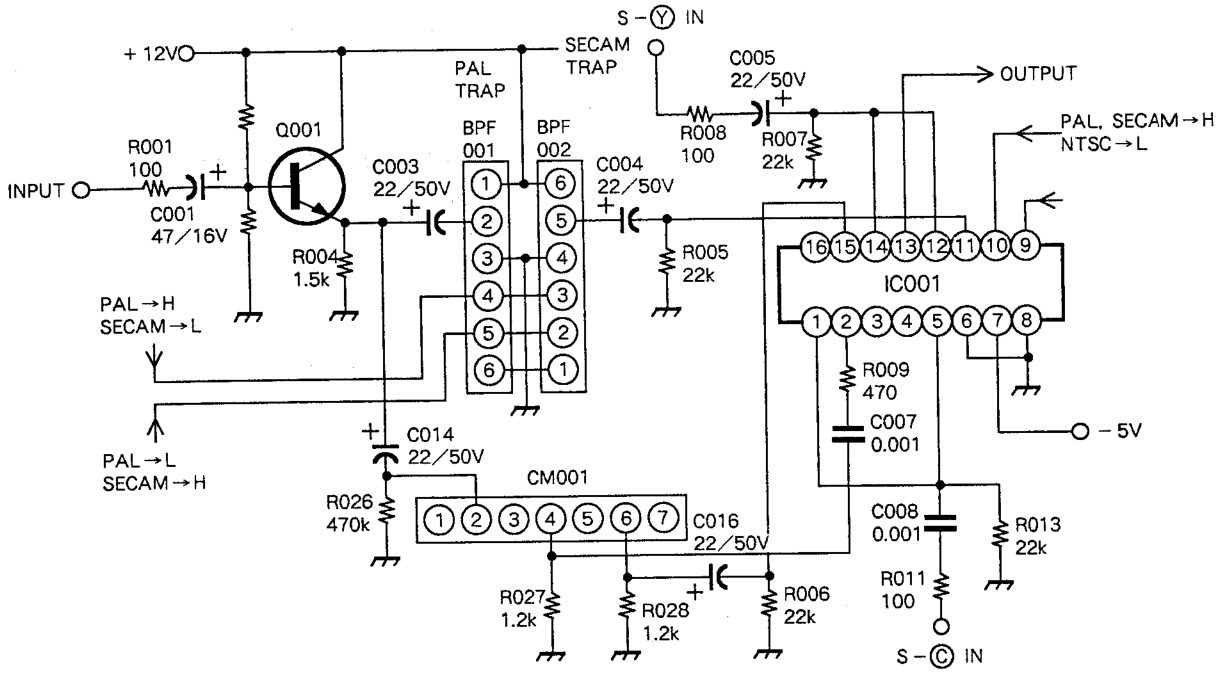
3-1-1. Y SIGNALS

1) The TRAP Circuit

The TRAP circuit receives video signals after the signals are fed through Q001. The TRAP circuit is used to extract the chrominance portion of the video signal. However, since this device is equipped to receive 3 types of chrominance frequencies (SUB CARRIERS), namely PAL, SECAM, NTSC 3.58 and NTSC 4.43, it is necessary to switch the TRAP circuit for each type of signal (except for PAL and NTSC 4.43 whose SUB CARRIERS are identical).

- B/W Signals

B/W signals are input into pin ② of BPF001, and are output from pin ⑤ of BPF002. This is a thru output obtained when the control terminals of BPF001 (pins ④ and ⑤) are Low and both traps are disabled. Subsequently, it is input into pin ⑪ of IC001.



- PAL Mode

Video signals are first input into pin ② of BPF001 wheresignals in the vicinity of 4.43MHz are extracted. The signals are then sent out through pin ⑥ and are input into pin ① of BPF002. BPF001 and BPF002 are respectively a PAL TRAP and a SECAM TRAP, while pin ④ of BPF001 provides PAL CONT and pin ⑤, SECAM CONT. In all cases, the TRAP is activated when the respective pin signals are High. When operating under the PAL mode, pin ④ will become High and pin ⑤ Low ; the signals pass through BPF002 and appear on pin ⑤ after which they are input into pin ⑪ of IC001. This chip is a switching IC used to switch between PAL, NTSC 4.43, NTSC 3.58 and YC signals. Recall that NTSC 4.43 and PAL employ the same method.

- SECAM Mode

The steps followed are identical to PAL up to the point where the signals are input into pin ① of BPF002. With the SECAM mode, however, pins ④ and ⑤ of BPF001 will both turn High. After signals in the vicinity of 4.43MHz and 4.25 MHz are extracted, the signals are then output from pin ⑤ of BPF002 and input into pin ⑪ of IC001.

- NTSC 3.58 Mode

Y signals are input into pin ② of CM001 (Comb Filter) while pin ⑥ and pin ④ output Y signals and chrominance signals respectively. Y signals are input into pin ⑮ of IC001 and chrominance signals into pin ② of this IC.

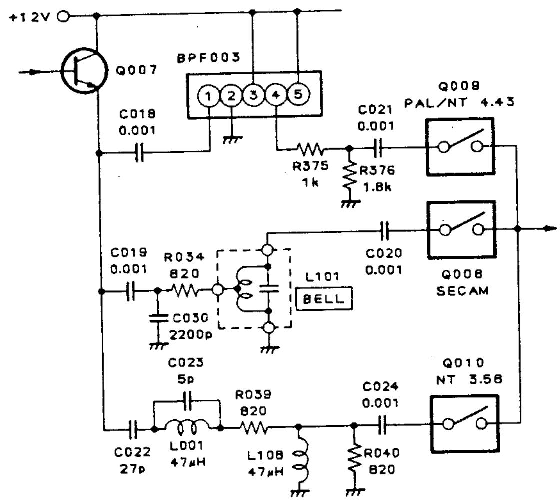
2) YC Signals
YC signals are fed to board BB in the form of S-VIDEO. Y signals are input into pins ⑫ and ⑭ of IC001 while C signals are input into pins ① and ⑤.

3) IC001 (HD24052BP)
This IC switches between PAL, SECAM, and, NTSC 4.43 /NTSC 3.58/YC modes. Outputs appears on pin ⑬ for Y signals and pin ③ for chrominance signals. The signal status of the controller terminals, pins ⑨ and ⑩, are shown in the following diagram.

	⑨	⑩
PAL・SECAM・NT4.43・B/W	H	H
NT3.58	H	L
YC	L	−

4) SHARPNESS IC
Y signals output from pin ⑬ of IC001 pass through the Delay Line; AMP Q003, Q004, and Q005; and finally the CLAMP circuit (Q212, 213). The signals are then input into pin ⑬ of IC005. The signals also serve as input signals for board BC (IDTV board); these are output from BA-1 31a.
The 2Y signals received from the BC board are switched by IC005 and output from pin ⑭. They are then input into pin ② of IC010 (SHARPNESS IC). The control terminals pins ⑨, ⑩ and ⑪ are High for VIDEO mode and Low for IDTV mode. For IC001, signals was peaked at about 3.6MHz for VIDEO mode and at approximately 6.6MHz for IDTV modes and are output from pin ⑩. Pin ⑧ is the sharpness control terminal; control voltage is −2.5V to 2.5V. Signals output from pin ⑩ are input into pin ⑦ of R. G .B. MATRIX IC003 (CXA1216P).

3-1-2. CHROMINANCE SIGNALS
PAL, SECAM, and NTSC 4.43 signals pass through Q001 and after DC cut at C009, are input into pin ④ of IC001. NTSC 3.58 signals go through COMB FILTER CM001 while chrominance signals are input into pin ② of IC001.
After being output from pin ③ of IC001, each signal is passed through a band-pass filter. This circuit is shown below. (circuit diagram)

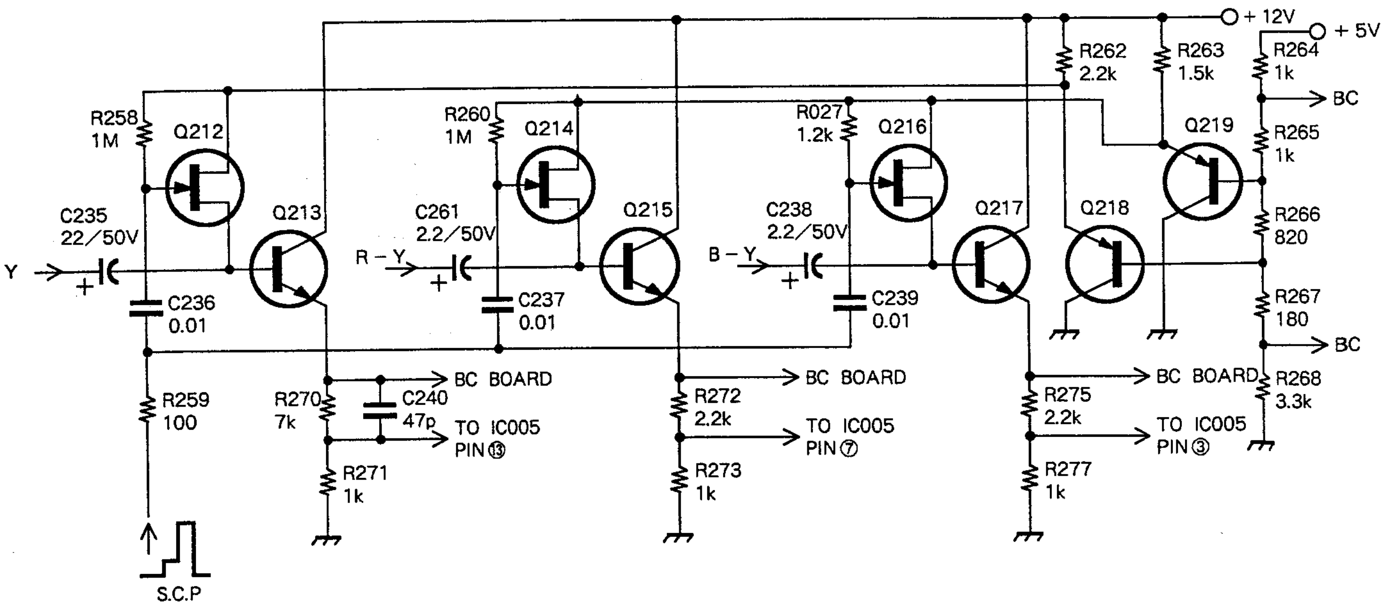


- IC002 (TDA4555 − V8)
  Chrominance signals are input into pin ⑮ of the decoder IC002 (TDA4555 − V8) after they are passed through the respective BPF. PAL and SECAM signals are output from pin ⑫ and fed through the DELAY LINE. The signals are then 1H delayed and input into pin ⑩. After the phase and level are adjusted by L103 and RV101, decoding takes place by adding the signals input from pin ⑮. Subsequently, the R − Y signals are output from pin ①, and the B − Y signals from pin ③. In the case of NTSC signals, the signals are decoded with out passing through the DELAY LINE ; the R − Y signals are output from pin ① while the B − Y signals are output from pin ③. ↗

The ID circuit is comprised of the following 3 of circuits.

a) A phase discriminator. This circuit compares the burst signals for PAL and NTSC modes against its internal reference signals.
b) Frequency discriminating circuit which is used to derive the H/2 signal in SECAM transmissions. It consists of an internal frequency discriminator and an external phase shift detector circuit, connected to pin ㉜ (SECAM ID reference circuit),
c) A logic circuit that provides H/2 signal detection for PAL and SECAM modes, in addition to its original ID function.

- CLAMP CIRCUIT
  The color − difference signal output from IC002 goes through the CLAMP circuit and enters IC005, an IC used for switching between IDTV. The operation of IC005 is identical to that of the Y signal. Output signals from IC005 are input into an R. G. B. MATRIX IC003 (CXA1216P).



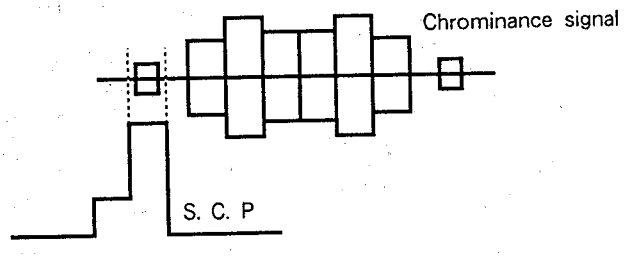
- HUE/COLOR CONTROL
  A HUE/COLOR CONTROL voltage ranging from −2.5V to 2.5V is sent to operational amplifier IC012 where the control voltage of IC003 (CXA1216P) is converted to between 2V to 7V.
  Because of inconsistencies in IC and resistors, adjustments are made using 3 volumes controls, namely SUB HUE (RV102/VOL for NTSC), HUE ADJ (RV204) and SUB COL (RV205).

- SUB BRIGHT/SUB PICTURE
  Pin ㉗ of IC003 (CXA1216P) is the CONTROL terminal for PICTURE while pin ㉘ is for BRIGHTNESS. The PICTURE level output is changed by rotating RV203 (SUB PIC) ; turning RV201 (SUB BRT) changes the blackness level.

3-1-3. IC004 (TDA2595)

Y signals are first passed through the DELAY LINE and then to AMP Q003/004/005 after which they are fed through the SYNC CHIP CLAMP circuit, comprised of Q352/351. Finally, the signal is input into pin ⑪ of IC004 (TDA2595). IC004 outputs the sandcastle pulse to pin ⑥ and C. sync pulse to pin ⑨. The sandcastle pulse is input into pin ㉔ of IC002 (TDA4555 − V8) while it also goes into the CLAMP circuit. C. sync goes into the sync sep circuit, resulting in the output of H. SYNC and V. SYNC pulses. H. SYNC is sent to pin ⑬ of IC006 (TC74HC157AP) via R240 while it is also input into the BC board where it becomes 2H. SYNC and input into pin ⑩ of IC006.
V. SYNC is input into pin ⑩ of IC006 via collector Q207 as well as into the BC board where it is converted to 2V. SYNC. The latter signal is input into pin ⑪ of IC006. Signals converted by IC006 are output as follows : H. SYNC from pin ⑫, V.SYNC from pin ⑨ and connector BA − 1 a − 3/HD (1) c − 3 VD (1). The C. BLK signals from pin ② of IC004 are merged with the C.BLK signals (BA − 1 c − 23) input from the DA board and fed into pin ① of IC003

The diagram to the right indicate the phase relationship of pin ⑮ of IC002, the chrominance signal and S. C. P of pin ㉔.



3-1-4. IC009 (CX7916)

CX7916 detects between 50Hz and 60Hz by receiving H. SYNC on pin ① and V. SYNC on ⑤.

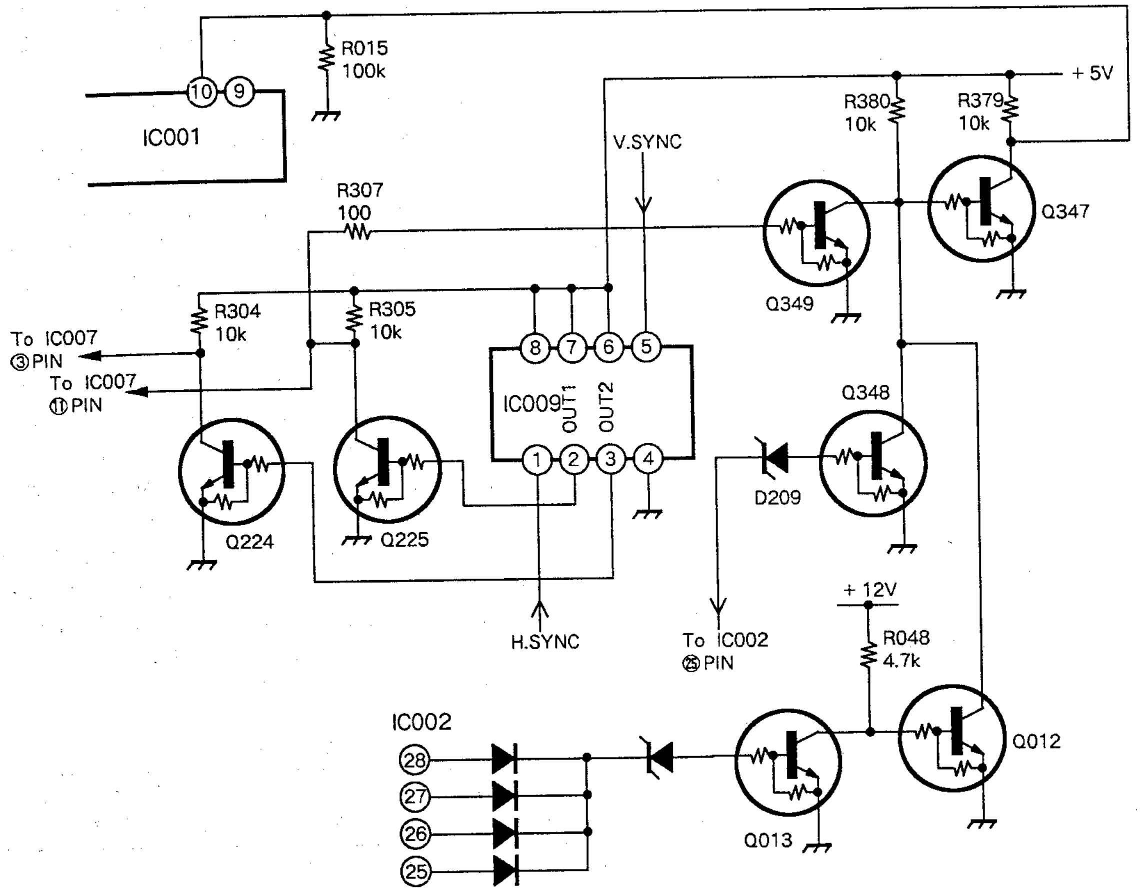
INPUT	②	③
50Hz (PAL、SECAM)	L	H
60Hz (NTSC 3.58 4.43)	H	L

The operation of the peripheral circuitry of IC009 are as follows :

1) NTSC 3.58
Pin ② of IC009 becomes High and Q225 turns ON, making collector Q225 Low while Q349 is turned OFF and the collector becomes High. Further, Q347 becomes ON and the collector Low, causing pin ⑩ of IC001 to become Low.

3) NTSC 4.43
Pin ② of IC009 turns High, providing the same operation as NTSC 3.58. However, since Q348 becomes ON and the collector Low while pin ㉕ of IC002 is High, pin ⑩ of IC001 becomes High.

4) B/W
When color signals are being received, pins ㉕ to ㉕ of IC002 will be High. In addition, Q013 is turned ON causing the collector to be Low while Q012 is turned OFF causing the collector to be High. These results in the previously described operation. For B/W signals, however, Q013 does not turn ON, and the collector will be High and Q012 turned ON, causing the collector to drop to Low. As a result, Q347 will be OFF and pin ⑩ of IC001 will be High.



2) PAL/SECAM
Pin ② of IC009 becomes Low while Q225 is turned off and the collector becomes High. Q349 turns ON and the collector becomes Low, causing pin ⑩ of IC001 to turn High when collector Q347 becomes High.

3-1-5. IC003 (CXA1216P)

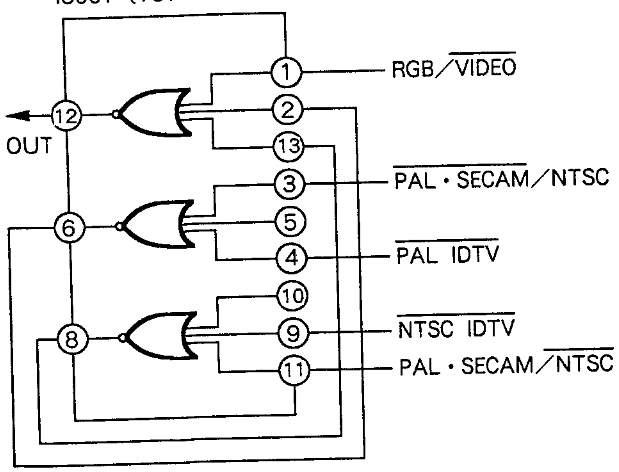
IC003 (CXA1216P) is an R. G. B. MATRIX IC. Pin ⑦ inputs Y signals, pin ⑥ inputs B－Y signals and pin ⑤ R－Y inputs while pin ① receives the BLK pulse (refer to section on IC004) and pin ③ receives the B. P. CLAMP pulse. Pins ⑮, ⑰, and ⑲ outputs B, G and R signals respectively.

a) DYNAMIC PICTURE SW.
Pin ⑪ of this IC003 is an auto－pedestal which activates the dynamic picture when SW1 is in the open position.

3-1-6. IC007 (TC74HC27AP)

This IC is an IDTV (BC board) SW whose pin ⑫ becomes Low in IDTV MODE, High in VIDEO MODE and Low in RGB MODE.
This line controls pins ⑨, ⑩ and ⑪ on IC007 (control terminal for switching signals Y, R－Y, B－Y for VIDEO and 2Y, 2 (R－Y), 2 (B－Y) on the BC board) ; pin ① of IC006 (control terminal for H. SYNC signal for VIDEO and 2H, 2V. SYNC signals on the BC board) ; and finally, pin ④ of IC010 (control terminal for sharpness control).

IC007 (TC74HC27AP)



3-2. CIRCUIT BOARD BB

3-2-1. RGB INPUT (VIDEO SECTION)

The RGB signals received through Input A or B are each input into pin ⑧ of RL401, 402, 403, after passing through 7A, 9A, 11A of connector BB－1. On the other hand, the RGB signals received through the switcher and CCQ are input into pins ⑬, ⑪, ⑨ of connector BB－2. These signals are then input into pin ⑭ of RL401, 402, 403. Pin ① of RL is controlled according to the mode shown in chart 1 and either of the signals output from pin ⑪ goes into C651, C660, C668.

Chart 1

SLOT SEL (BB-1 23B)	RL401, 402, 403 Pin ①	RL Output Pin ⑦
H	H (CCQ)	Pin ⑭
L	L (INPUT A, B)	Pin ⑧

The red signal is clamped by a clamp circuit comprised of Q666, IC410 so that the pedestal level of the signal fed through Q667, 650 is identical to pin ⑤ of IC410. After clamping, the signal passes through Q670, 674, 678 ; an AMP section comprised by Q682, 683, 684, 685, 686 and is output from 17B of connector BB－1. The circuit of the blue signal is similar and the signal is output from 19B of connector BB－1. As far as the green signal is concerned, the signal passes through a clear blue circuit (refer to page 59) after which it follows a similar path and is output from 18C.

3-2-2. VIDEO INPUT (VIDEO SECTION)

Signals from this device's VIDEO IN terminal passes through R539 and the buffer of Q509 and are input into pin ⑫ of IC404. Moreover, as far as the signals received through the S－VIDEO IN terminal is concerned, Y－signals are input into pin ② of IC404 after passing through Q516, while the C－signals are inputs into pin ⑤ after passing through Q517. On the other hand, the VIDEO, Y/C signals entered through INPUT A, B, each goes through the RGB signal line and inputs into pin ⑧ of RL401, 402, 403. VIDEO, Y/C signals received by the switcher are similarly input into pin ⑭ of RL401, 402, 403. As previously mentioned for RGB input the switch of RL, each output goes into ⑬, ①, ③ of IC404 after passing through Q506, Q507, Q508. At this point, pins ⑨, ⑩, and ⑪ of IC404 is under the mode control shown in chart 2. VIDEO signal, Y－signal, C－signal are output from pins ⑭, ⑮, and ④ after which they are sent out through BB－1 connector 5C/4B/5B to the BA board. The RGB signals decoded by the BA board are input to BB－1 connector 8C, 9C, 10C where they are respectively fed through Q669, 687, 706 as well as the VIDEO/RGB SW. They are then passed through the emitter follower on Q674, 692, 711 and are output from BB－1 connector 17B, 18C, 19B, following a similar path as that for RGB inputs.

Chart 2

V. IN SEL (BB-1, 23A)	IC404 ⑨, ⑩, ⑪	IC404 Output ⑭, ⑮, ④
H	L (VIDEO IN)	⑫, ②, ⑤
L	H (Others)	⑬, ①, ③

3-2-3. SYNC SECTION

External SYNC

HD, VD received by INPUT A, B are fed into connector 1A, 2A of BB－1 and are input into pins ⑭ and ⑪ of IC405. On the other hand, signals received by the switcher are input into pins ⑦ and ⑥ of BB－2. For this input and in the case of HD, the peak signal is clamped at 0.7 V by D501 after being terminated by R501. After this operation, Q501 and 502 does the switching and a 5Vp－p pulse is output from the collector of Q502. The pulse is then input into pin ⑬ of IC405. VD also goes through a similar circuit, with the pulse being output from the collector of Q504 and input into pin ⑩. The operation of IC405 is controlled according to the modes shown on chart 3 ; the pulse is output from pins ⑫ and ⑨ and are input into pins ⑬ and ⑩ of IC407.

Chart 3

SLOT SEL (BB-1、23B)	IC405 Pin ①	IC405 Output Pin ⑫, ⑨
H	H	⑬, ⑩
L	L	⑭, ⑪

On the other hand, in the case of VIDEO inputs, sync sep is handled by board BA. Subsequent to this operation the signals go to connector 4A and 5A of BB－1 and are input into pins ⑭ and ⑪ of IC407. IC407 is controlled according to the modes indicated on chart 4 whereby the outputs go from pins ⑫ and ⑨ and connector 26C and 26A of BB－1.

Chart 4

V. IN SEL (BB-1, 23A)	IC407 Pin ①	IC407 Pin ⑫, ⑨, ⑦
H	L	⑭, ⑪, ⑤
L	H	⑬, ⑩, ⑥

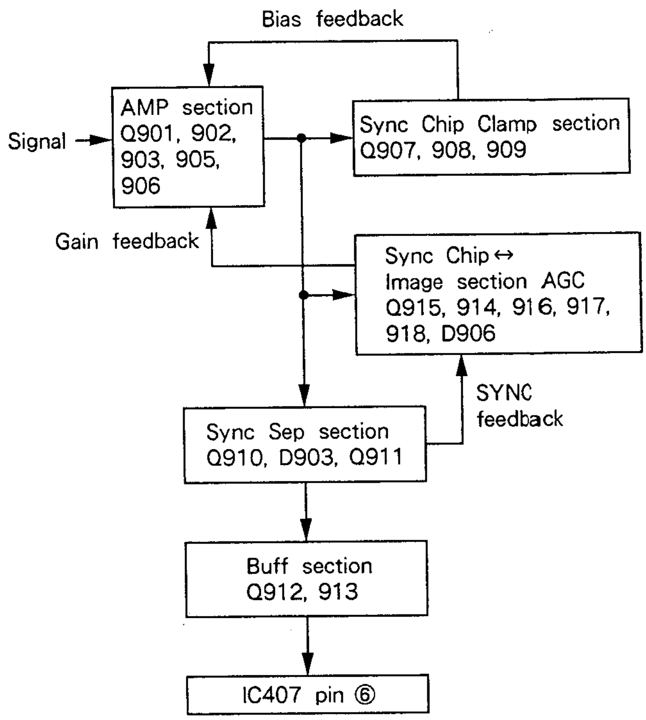
3-2-4. SYNC ON GREEN

G signals from the switcher and from INPUT A and B are, as mentioned earlier, switched by RL402 and input into pin ⑦ of IC401. When the HDVS board is used instead of INPUT A and B, ternary sync pulse is received from connector 16C of BB－1. IC401 is controlled on the basis of the modes shown on Chart 5 and the output comes from pin ④. These output signals pass through C903 and are then sliced by sending them through the AGC circuit. Finally sync sep OUT is output from the buffers of Q912 and 913.

Chart 5

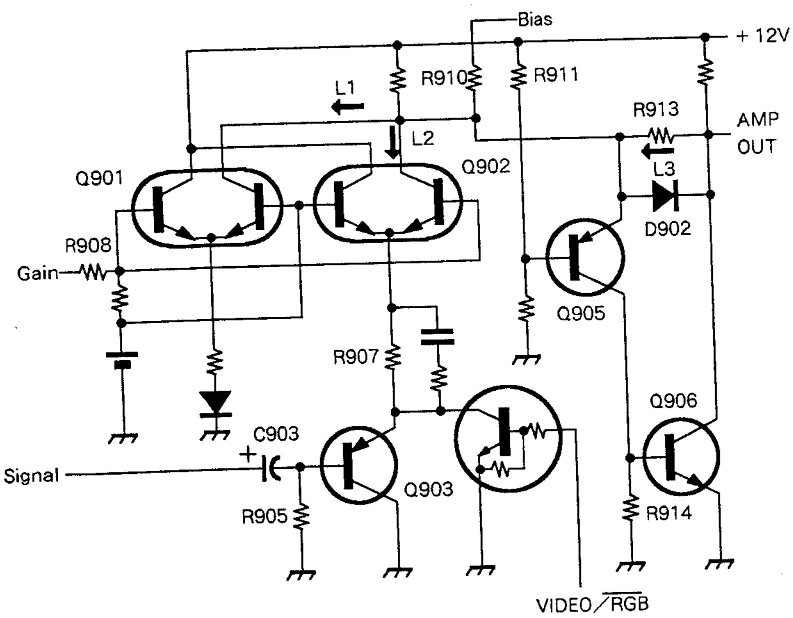
HD SELECT BB-122A	SLOT SELECT	IC401 Pin ④
L	－	Pin ⑦
Open	H	Pin ⑦
Open	L	Pin ②

Sync on Green Sync Sep Block Diagram



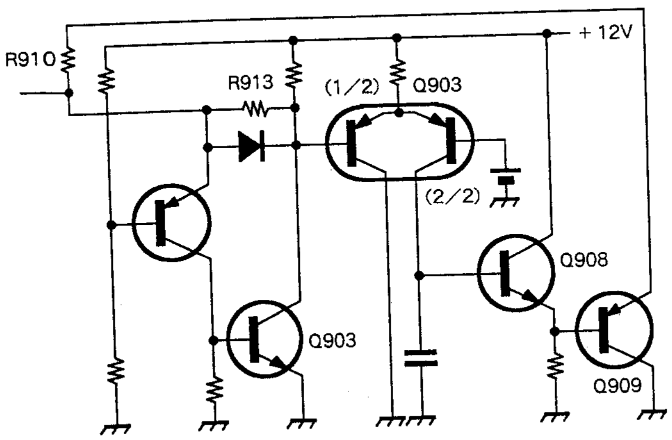
The sync sep output is input into pin ⑥ of IC407. On the other hand, during VIDEO input, H. sync is input into pin ⑤ while pin ⑦ outputs the signals converted by the mode indicated on Chart 4. The converted signals are then input into connector 25C of BB－1.

3-2-5. AMP SECTION



Signals are passed through C903 and the signals biased by R905 are converted to an electric current by Q903. This current goes from R907 and flows to emitter Q902. At this point, the signal current, adjusted by the gain control voltage while passing through R908, flows into the collector of Q902. Meanwhile, since the voltage of collector Q902 is fixed at the base electric potential of Q905 + V_{BE}, return voltage flows from R913 so that this electric potential remains unchanged. A reverse waveform appears on collector Q906. Therefore, the maximum gain can be expressed as R913/R907. Also note that D902 is a limiter for instances when the electric potential of collector Q906 becomes lower than the base electric potential of Q905.

3-2-6. BIAS SECTION



Signal appearing on collector Q903 goes into the base of Q907 (1/2) and is compared against the base voltage of Q907 (2/2) (the voltage determined by R918, 921, 928, 933 and 934). As shown in Fig. 1, for example, if the base electric potential of Q907 (2/2) existed on the waveform's sync section electric potential, (2/2) of only the sync section is turned ON and the Q908 base electric potential increases, resulting in an increase of the base of Q909. As a result, the DC current that flows from R910 to Q909 decreases and the electric potential of collector Q903 decreases as well. Finally, R910 releases electric current so that the highest point of the base electric potential of Q907 (1/2) and the base electric potential of Q907 (2/2) are the same.

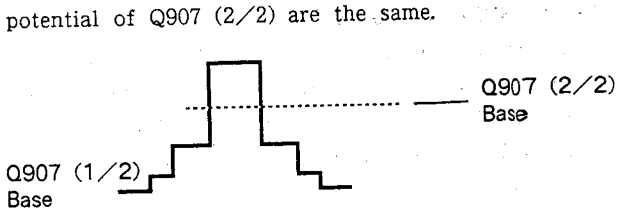
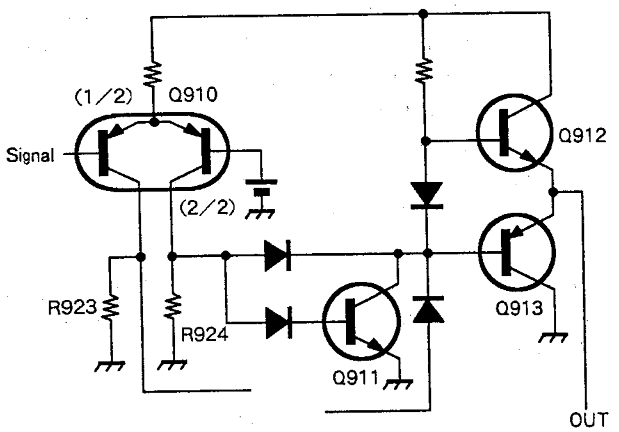


Fig. 1

3-2-7. SYNC SEP SECTION



The signal generated by the AMP section (described earlier) is input into Q910 (1/2) and the DC voltage as determined by R918, 921, 928, 933 and 934 is input into Q910 (2/2). The relationship in voltage between the two is demonstrated in Fig. 2 where it can be seen that Q910 (2/2) is turned ON only starting from the sync section. Other sections become Low. This pulse is switched by Q911 and is extracted as 5V negative composite sync.

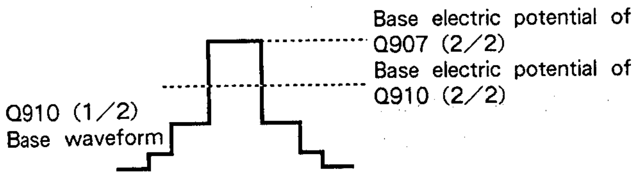
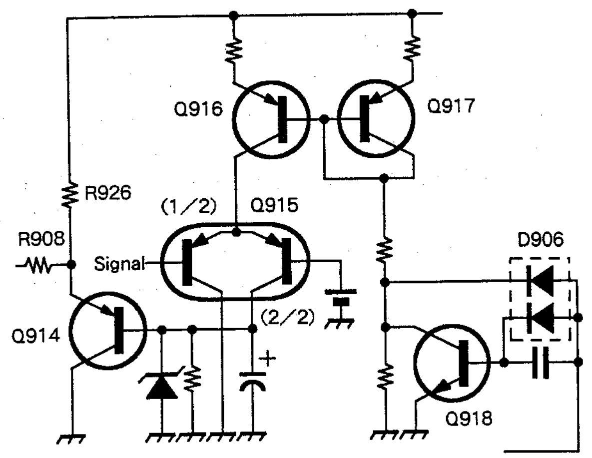


Fig. 2

3-2-8. GAIN CONTROL SECTION



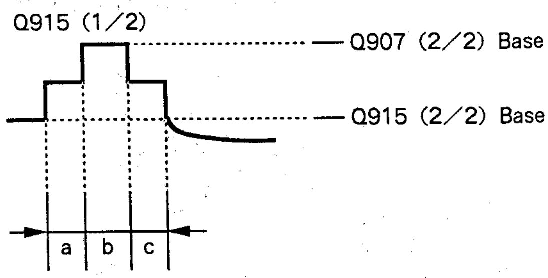
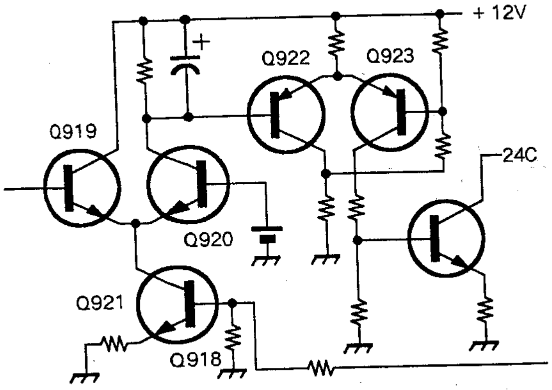


Fig. 3

The output from AMP is input into the base of Q915 (1/2) while the electric potential as determined by R918, R921, 928, 933 and 933 is fed into R915 (2/2). This means that the one with the lower base voltage is turned ON. On the other hand, sync sep out (negative polarity) that appears on collector terminal Q910 (1/2) is input into Q918. This is turned ON only during the time the sync section is operating. Subsequently, current flows into Q917, and the same current flows into Q916. As a result, supposing that a waveform similar to that shown in Fig. 3 is input, Q915 (2/2) is turned ON during a and c, the electric potential of collector Q915 (2/2) as well as that if emitter Q914 increases. When this occurs, as described earlier in the AMP section, the electric potential of the gain control terminal increases, making the AMP's gain increase. It is through this type of operation that the difference in electric potential between the Pedestal section and the sync CHIP section becomes the base electric potential variance between Q907 (2/2) and Q915 (2/2).

3-2-9. TERNARY SYNC DISCRIMINATING CIRCUIT



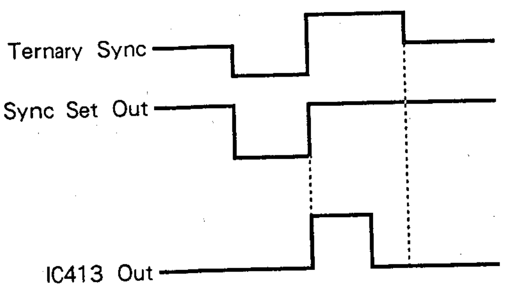


Fig. 4

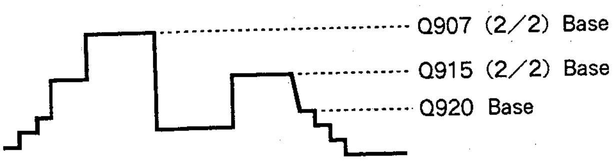


Fig. 5

AGC and clamped signals produced by the previously mentioned sync sep circuit are input into the base of Q910 while the DC voltage shown in Fig. 5 is added to Q920. Furthermore, Q921 is connected to the emitters of Q919, and Q920, and the pulse shown in Fig. 4 is entered into their bases, making the system ON only when the voltage is higher than the pedestal's ternary sync voltage. As a result, whenever ternary sync is input, 920 turns ON only when the voltage is higher than the pedestal's and the electric potential of collector Q920 falls. This is recharged by C911 and transmitted to the base of Q922. Q922 and Q923 are schmitt trigger circuits whereby when the base electric potential of Q922 falls, Q923 becomes OFF, lowering the collector electric potential and turning Q924 OFF.

3-2-10. AUDIO SECTION

The signals connected to the switcher (R, L, MIX signals) are input into pin ② of IC408, 409 via pin ① of connector BB−2. In addition, the R and L signals input into INPUT A and B are fed into 13A and 14A of connector BB−1 and enters pin ⑫ of IC408, 409. IC408 and 409 are controlled by the mode shown in Fig. 6 and output through pin ⑭. The R, L signal is then input into pins ⑥, ④ of IC412, increased or reduced according to the changes in the VOL control terminal voltage of pins ② and ⑧, and output from pins ⑦, ③ as well as from 3C, 3B of connector BB−1.

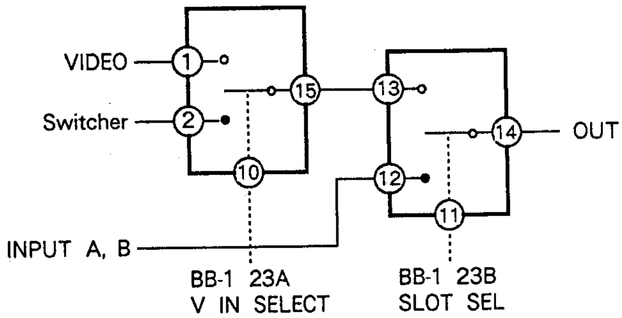


Fig. 6

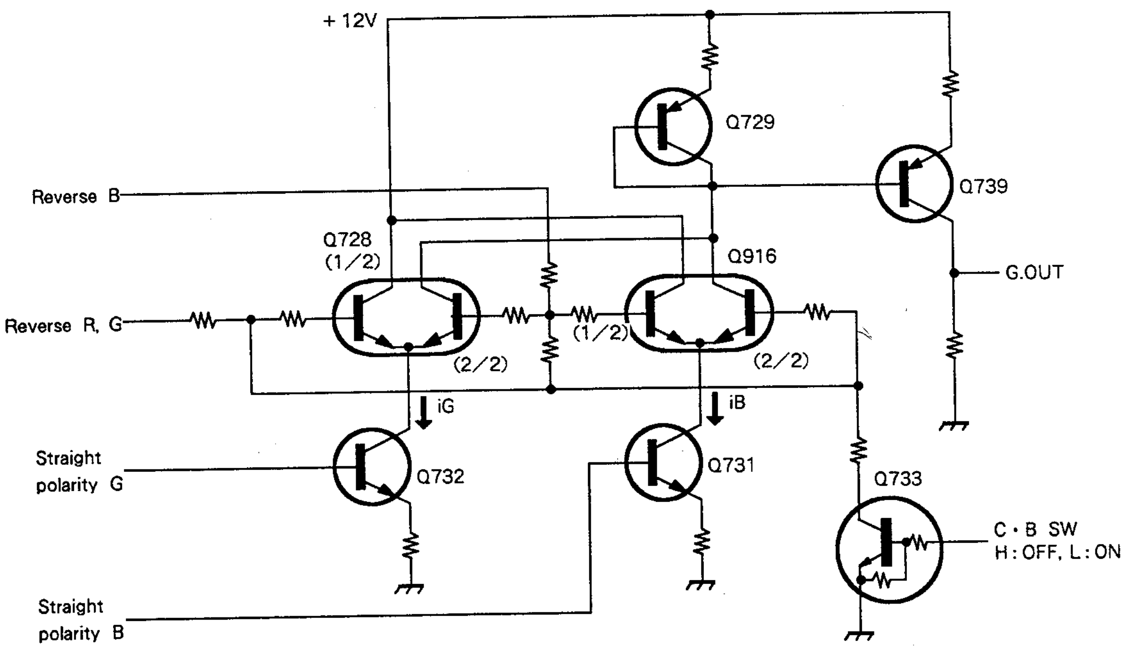
3-2-11. SIRCS SIGNAL

Signal received by the optical receptor of this unit goes into 1C of connector BB−1, the signal from the attached remote control unit to 1B of connector BB−1, and the signal from the switcher are input into pin ② of BB−2 respectively. Signal received at the optical receptor unit takes the following pass : Q450, 451 to SW included in the SIRCS IN terminal, to D450, to Q454 and finally to 23C of connector BB−1. In addition, it is also sent to SIRCS OUT via Q456. At this point, the included SW turns OFF when a terminal is inserted into SIRCS IN, and ON when removed. Therefore, when the terminal is plug the WIRELESS input on the main unit is disabled. Instead, the plug WIRED input signal is sent to D450. On the other hand, the signal from the main unit's remote controller goes into D450 after which it follows the same path. Furthermore, signal from switcher is sent to Q453 and after that is the same.

3-2-12. CLEAR BLUE CIRCUIT

The clamped R (Red) signal appears in reverse waveform at collector Q667. This is sent to Q668 and the G (Green) signal is similarly sent to Q727. As result, the signal that appears on emitter Q668 and 727 is a signal with low base electric potential (signal with a higher image level). This is sent to the base of Q728 (1/2) and 730 (2/2) via R738 and 747. On the other hand, B (Blue) signal appears in reverse waveform on collector Q737 and is sent to Q736 after which it is sent to the bases of Q728 (2/2) and 730 (1/2) via R740 and 743. At this point, for R and G signals the DC level is determined by the power supply from Q734 when it is reversed. While the DC level for B signal is determined by the power supply from Q735. Furthermore, the emitter of Q728 is connected to collector Q732 and the G signal current flows as result of the G signal input into the base. Likewise, the emitter of Q730 is connected to the collector of Q731 and the B signal current flows as result of the B signal input into the base. First of all, when the C. B SW is in the OFF position Q733 turns ON and the base electric potential of Q728 (1/2) and 730 (2/2) becomes Low. ↗

As result, Q728 (1/2) and Q730 (2/2) turns OFF ; Q728 (2/2) and Q730 (1/2) turn ON ; a reverse waveform of G signal appears on collector Q729 after which it is reversed by Q739 and input into Q688. When C.B SW is ON, the base electric potential of Q728 (1/2) and Q730 (2/2) are compared against the base electric potential of Q728 (2/2) and Q730 (1/2). The transistor with higher base electric potential is turned ON. As result, if the signal level of B signal and R, G signal is compared and if the B signal level is higher Q730 (2/2) and Q728 (1/2) are turned ON and a MIX signal of B signal and G signal is output to collector Q729. In case, the B signal level is lower than the signal level of R,G, Q730 (1/2) and Q728 (2/2) turn ON and only the G signal is output to collector Q729. As shown above, CB operation produces G signal to B signal and turns blue to cyan.



3-2-13. TEST SIGNAL GENERATOR

When the test signal mode is selected, 27C of connector BB – 1 becomes Low and collector Q656 becomes High. It then passes through D652, 653 and turns Q671, 672 ON when R, Q689, 690 when G and Q708, 709 when B and turns OFF the RGB and VIDEO signals. On the other hand, test signal are input into each RGB signal via Q675, 693 and 712.

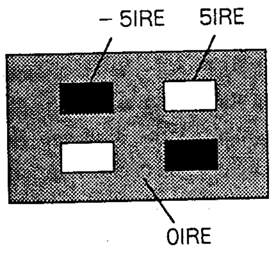
- Signal (hatched, dotted, and other test signal) Generator Section.
  ECL signals are input into 28A, 28B of connector BB – 1 and the respective signals are input into Q660, 661. The lighting portion of the test signal turns the Q660 side High and Q661 Low. As result, Q660 and Q665 becomes ON and electric current flows into collector Q654 through a current mirror circuit. Then a voltage is generated by R659, R663, and R655 (described later) and is input into Q652. This signal is added to each of the RGB circuits.

- C. BRT Signal (signal that increases or lowers brightness of the image during ZONE MODE) Generator Section.
  ECL signals are input into 28C, 29C of connector BB − 1 and are respectively input into Q663 and 665. For normal test signals, the base of Q663 becomes Low and since Q665 is already High, Q663 turns ON and current flows through Q664 and Q662. On the other hand, under the ZONE MODE, excluding the area which is to emphasized, the base of Q663 turns High and Q665 becomes Low, making Q663 and Q662 both OFF. As a result, the current that flows through Q660 as well as Q654 decreases, causing the base electric potential of Q652 to fall and the brightness to decrease.

- BOARDER Signal (the shadowed portion of the character signal) Generator.
  ECL signals are input into 29A, 29B of connector BB − 1 and the respective signals are input into the base of Q658, 659. When the mode changes to character signal output mode, the character signal plus the shadow portions turn the base of Q658 High, the base of Q659 Low and Q658 becomes ON. Consequently, the base electric potential of Q657 becomes negative (−) and these are transmitted to the bases of Q659, 694, 713 and Q677, 695, 714 turn ON. For this reason, the RGB signals are cut off by this section and shadow is formed.

3-2-4. PLUGE SIGNAL GENERATOR

Bluge signal is a signal like that shown on the figure on the below. Signal is input from 27A, 27B of connector BB − 1 and respectively input into the bases of Q650, 651. For regular TEST signals, 27A is set to High and 27B is set to Low and the transistor on the opposite side of Q650 signal input side turns ON. Electric current then close to R655 and is transmitted to the base of Q652. For this reason, regular TEST signals will have the MIX signal from Q650 and Q654 added to the base of Q652. In the case of pluge mode for the −5IRE section on the diagram, 27A, 27B both turns Low and since no current flows to R655 the electric potential of Q652 falls. For the 5IRE section, 27A, 27B become High and current flows to R655 from both Q650 and 651 causing the electric potential of Q652 to fall. As result, pluge signal is generated.



PLUGE SIGNAL

3-2-15. CHARACTER SIGNAL GENERATOR

Each of the RGB character signal are input as ECL signals into 30A, 30B, 31A, 31B, 30C of connector BB − 1. Since the circuit is the same for R, G, and B, the circuit for R only will be explained. Signals input from 30A, 30B are respectively input into the bases Q680, 681. Under normal circumstances, 30A is Low and 30B is High and Q680 is turned ON. Therefore, the base electric potential of Q679 is split by parallel resistance between R703, 961, and R704, 711 and is lower than the electric potential of Q678, causing the input signal to pass through Q678 unchanged and input into Q682. On the other hand, in character mode, the character portion only will have 30A High and 30B Low. Q680 is turned OFF and the base electric potential of Q679 increases. At this point, Q679 turns ON resulting in the input signal and the character signal to be output alternately and input into Q682.

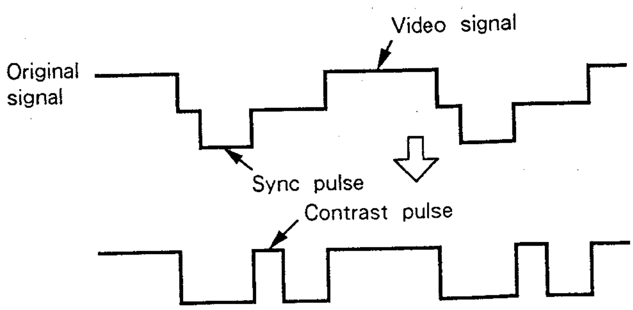
3-3. CIRCUIT BOARDS CA (RG) AND CA (B)

STRUCTURE

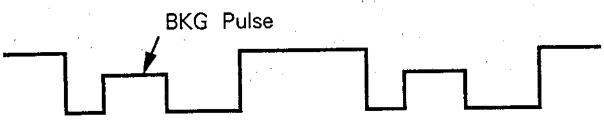
The CA (RG) board consists of signal processors for RED and GREEN CH. (BKG, DRV, Contrast, and Brightness controls plus cut off SW, blanking system, and pedestal clamp), video output amplifier, final − stage clamp circuit, automatic background circuit, peak ABL, and single − tube ABL circuit. Note that a gamma correction circuit accompanies the RED CH. The CA (B) board includes these functions for the BLUE CH. : signal processing (same features as for CA (RG) board), gamma correction circuit, video output amplifier, final − stage clamp circuit, automatic background circuit Σ ABL circuit, and G1 blanking circuit.

3-3-1. SIGNAL PROCESSING

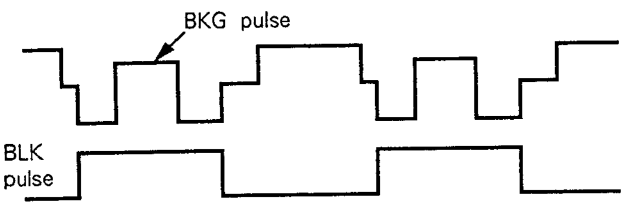
BKG, DRV, contrast, and Brightness control ; cutoff SW ; blanking and pedestal clamp signal processing are managed by IC104 (RED CH), IC204 (GREEN CH), and IC304 (BLUE CH). Signals input into pin ㉖ through AC merging are first clamped at backporches and reference pulse (contrast pulse) for gain control (see diagram below) are inserted.



The pulses are then sent through a gain control amplifier (DC control) after which a feedback is applied so that the control pulse becomes as large as a certain reference value. This circuitry enables contrast to be controlled by simultaneously inserting various levels of control pulses while DRV can be controlled by changing the reference value against which the contrast pulse is compared. This circuit design brings about excellent inter – channel tracking performance.
When these processes are completed, instead of the contrast pulse, reference pulses for brightness and background control (BKG Pulse) are inserted. Brightness and background control is carried out by changing the level of this BKG pulse.



As shown in the diagram below, with the exception of the BKG pulse section, blanking is applied by the blanking pulse input from pin ⑤ and the pulse is output from pin ③.



3-3-2. VIDEO OUTPUT AMPLIFIER

This amplifier makes use of hybrid IC VPH05 (IC101, 201, 301) and is comprised of a cascode amplifier and a complimentary buffer. Note that a peaking terminal is provided in pin ③.

3-3-3. FINAL-STAGE CLAMP CIRCUIT

This circuit uses a hybrid IC SNY－8C02 (IC103, 203, 303). As the BKG pulse sector is clamped here, the pedestal level can be adjusted by changing the size of the BKG pulse.

3-3-4. AUTOMATIC BACKGROUND CIRCUIT

(Only the RED CH is explained here, but the explanation is applicable to other CH as well.)

The Ik that is detected by a cathode beam current detecting circuit (comprised of Q104, 105, 106, 107, 112) is converted to voltage and is sent through the voltage follower of IC102 (2/2). The voltage is then S/H'd by Q111 and C119 and the clamp voltage of the previously – mentioned final – stage clamp circuit is modified by IC102 (1/2) so that the voltage becomes the same as the reference value.

3-3-5. SINGLE TUBE ABL CIRCUIT

The beam current detected by cathode beam current detecting circuits Q103 (Red), Q203 (Green), and Q303 (Blue) are converted to voltages and respectively integrated. Q16, 17 and 18 determine which RGB voltage is the largest and this voltage is passed through the reverse phase amplifier IC8 (2/2) via Q19. If the voltage is greater than the standard value, Q15 acts to lower the contrast.

3-3-6. PEAK ABL CIRCUIT

Each beam current that is derived from the above RGB cathode beam current detecting circuits is added by IC8 (1/2) and the contrast is lowered by Q14 if greater than the standard value.

3-3-7. Σ ABL CIRCUIT

The ABL voltage detected by the secondary side of the flyback transformer goes into the base of Q30 and is compared against the base voltage of Q31. When the flyback current becomes greater than the standard value, the contrast is lowered.

3-3-8. G1 BLANKING CIRCUIT

The TTL level BLK pulse is amplified to approximately 112Vp－p by circuits Q32 to Q40. They are then supplied to G1 of each of the R.G.B. channels.

3-4. CIRCUIT BOARD DA

The functions of board DA can be divided into the following :

1. AFC Circuit System
2. Waveform Generation
3. Others

3-4-1. AFC CIRCUIT SYSTEM

(1) H. SHIFT···AFC achieves synchronization by comparing H. SYNC and HD (Horizontal Deflection). When pulse hd is created from HD by shifting a certain phase (τ), and if the AFC is then taken with H. SYNC and hd, the AFC of HD will be shifted by $-\tau$. Therefore, changing τ results in a H. SHIFT.
In practice, the horizontal deflection HD is feedback to connector 7 − b after which it passes through BUFF Q1 and enters IC8, the H. SHIFT circuit. The NOISE content is removed by SW of IC8 and a pulse is produced by IC9 (1/2) using its leading edge as a trigger. Since the integrated value of output (7) of IC9 and Vcc/2 is compared by IC10 (1/2) and feedback, the second diagram of Fig. 1 becomes a short waveform with a 50% duty factor. This output is once again input into IC9 (2/2) and sent through a similar feedback system. If the phase is controlled using the H. SHIFT voltage (−2.5V to +2.5V) from connector 27 − b rather than the comparing voltage Vcc/2, a movement of ±22% is observed as shown in the third diagram in Fig. 1. By entering this into IC13 and by creating a rectangular waveform with a 50% duty factor, a pseudo HD pulse for AFC use is realized.

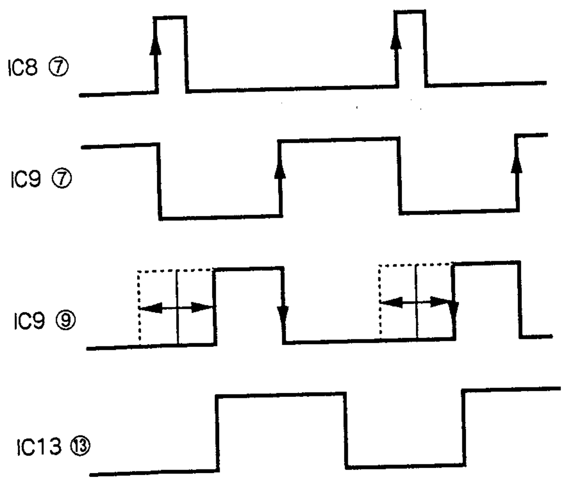


Fig. 1

(2) V. SHIFT···V. SHIFT uses the same method as V. SHIFT to shift the phase of incoming V. SYNC. The circuit is almost the same as that of H. SHIFT. The V. SYNC of connector 9 − a is delayed by about 1V with IC11, IC12 and the phase shift is accomplished with the V. SHIFT control voltage of connector 27 − c.

(3) AFC CIRCUIT···IC14 is a hybrid IC that includes a jungle IC and is responsible for AFC and V. HOLD. In terms of its operation, when H. SYNC is fed into pin ⑧ of IC14 it does a F − V conversion and outputs a H. OSC waveform from pin ⑨ of IC14 which corresponds to the frequency's fo. RV1 is used to adjust fo.
For VIDEO operation, pin ① of IC8 becomes "Low", Q27 goes off, and the voltage that is decided by resister division of RV3, R163, 164 is input into pin ⑤ of IC14. This becomes the fo voltage for VIDEO use.

(4) V. HOLD CIRCUIT···The V. SYNC OUT described in "(2) V. SHIFT" is fed from Q14 to pin ⑪ of IC14. A F − V conversion is done inside IC14 based on this pulse and VD of fo corresponding to the input frequency is output from pin ⑫ of IC14.

3-4-2. REGISTRATION WAVEFORM GENERATOR

(1) REGISTRATION IC SECTION···When VD is input into pin ⑤ of IC201 and HD is input into pin ㉔, registration waveform is created using the leading edge of the input signal as trigger (Fig. 2-1, 2-2). The peak of V. SAW, H.SAW is determined by the voltage of pin ㉗ and ㉕ respectively. Since a parabola wave is SAW×SAW, when the SAW amplitude becomes 1/2 it becomes 1/4. Other waveforms will become 1/4, 1/8 and so forth depending on how many times a multiplication is performed. Pin ③ and pin ④ outputs a rectangular waveform of 1/2H, 1/2V respectively. ↗

(2) V. SIN WAVEFORM···When a full wave rectification is performed with IC208 using the waveform of pin ⑩ of IC201, the waveform of pin ① of IC208 will be like that shown in Fig. 3-a. The parabola wave of pin ⑪ of IC201 is DC-shifted to make the output of pin ① of IC209 as shown in Fig. 3-b. Q205 to 212 comprise a multiplier and when Fig. 3-a and 3-b are entered into this multiplier, a waveform similar to the one shown in Fig. 3-c is produced. This will be divided by IC210 to make the first half of V-scan into V. SIN 1 and the latter half into V. SIN 2.

(3) H. SIN WAVEFORM···As with V. SIN waveform H. SAW will be full-wave rectified using IC217 while H. PARA will be DC-shifted with IC215. Each of these are multiply by Q213 to 220 to create ,waveforms similar to V. SIN.

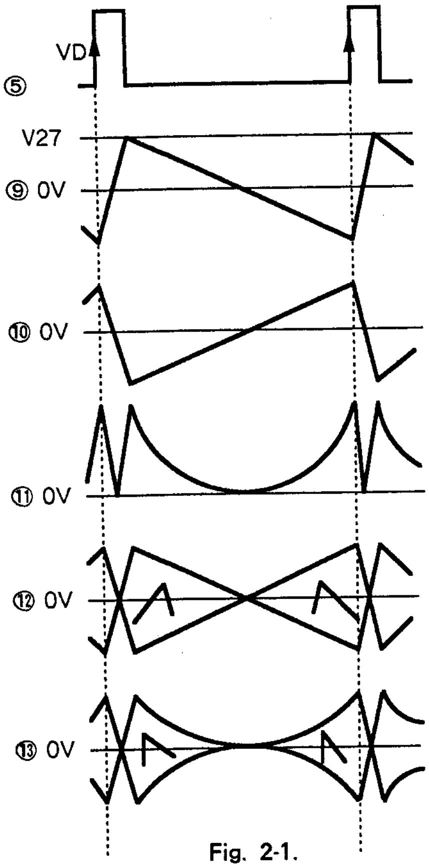


Fig. 2-1.

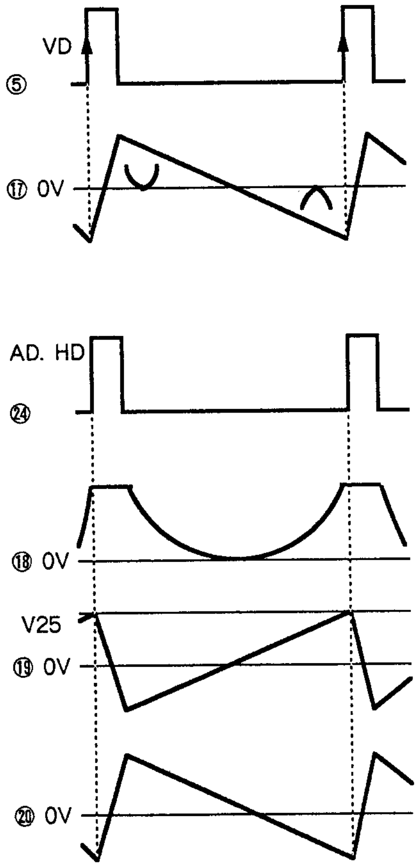


Fig. 2-2.

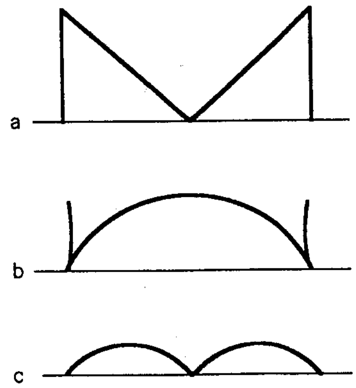


Fig. 3.

3-4-3. OTHERS

(1) AD. HD ··· Registration correction is affected by eddycurrent. To rectify this problem registration waveforms are created by advancing the waveform by 1 to 2 μs. The horizontal deflection of HD is input into pin ④ of IC3. A constant that will become approximately 3 to 4 μs will be used and integrated (pin ⑥ of IC3). Next the horizontal deflection of HD is input into pin ⑪ of IC3 and a pulse created using the leading edge as trigger. This $\overline{Q}$ output will be integrated and the result of previous integration will be compared against IC4. Since a feedback is applied, the pulse width of pin ⑥ and ⑨ of IC3 will be the same. As a result, the pulse width of pin ⑨ of IC3 will become 3 to 4 μs. Because the original HD (pin ⑪ of IC3) is about 2 μs, the net effect on the pulse of pin ⑨ of IC3 will be an advancement of 1 to 2 μs. This will be input into IC201 to create a horizontal registration correction waveform.

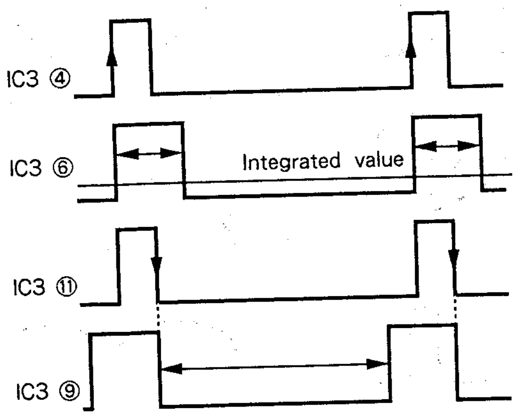


Fig. 4

(2) BLK (Blanking) PULSE

1) V. BLK···The position of BLK has been fixed so that even if the size is altered, the on-screen position of BLK will not change. By performing slice and comparing operations on a certain level of V. SAW, a pulse such as BLK 1 that is shown in Fig. 5 is created (IC220). If the bias of BLK (T) in Fig. 5 is changed, the width of BLK 1 alters. V. BLK is structured by adding a retrace line, as well as VD and V. Pulse so that BLK is effected during a V. STOP.

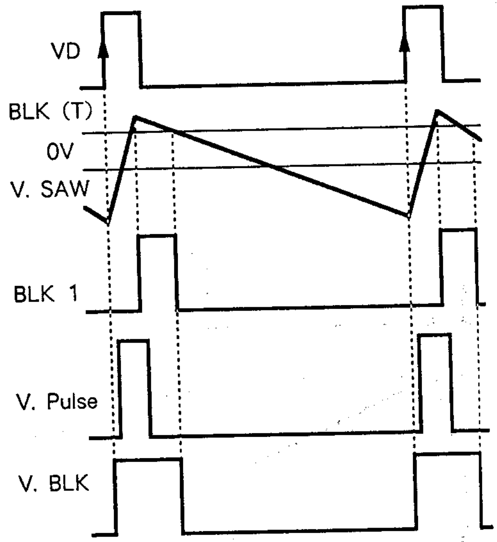


Fig. 5

2) H. BLK…Although similar to V. BLK in principle, since H. SAW is created with AD. HD, if the pulse created by slicing H. SAW with H. BLK (R) and if HD is added to create H. BLK, the phase of the two BLK Pulses will not align as shown in Fig. 6, H. BLK 1. For this reason, H. BLK will be created by padding HD.
A pulse is created by shifting the voltage level of connector 25 – c and shifting H. SAW (Fig. 7 H. BLK 2). Voltage A will be defined to be the voltage resulting from integration. BLK (R) is created as follows. First add HD to pin ⑪ of IC5 and create a pulse using the leading edge as a trigger. Then take the integrated value of output $\overline{Q}$ (pin ⑨), compare it against A in the foregoing, and apply a feedback until the same integration value is obtain. BLK (L) is created in the same manner.

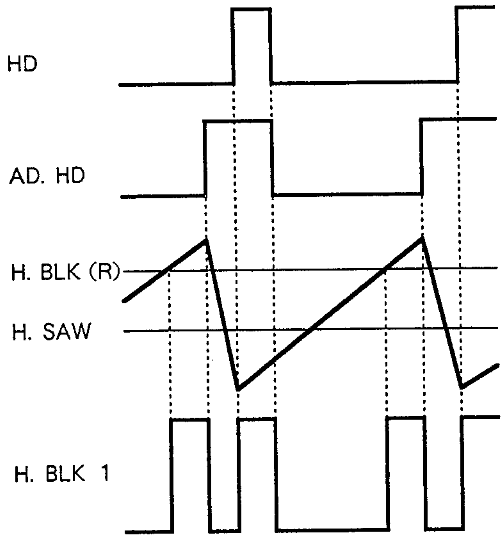


Fig. 6

3) C. BLK…Feed BLK Pulses V. BLK (1) and H. BLK (2) through the decoder circuit. C. BLK will be output from pin ⑮ (OUT). Pin ⑮ is an OR output which becomes "Low" only when pins ①, ②, ③, and ⑥ are also Low.

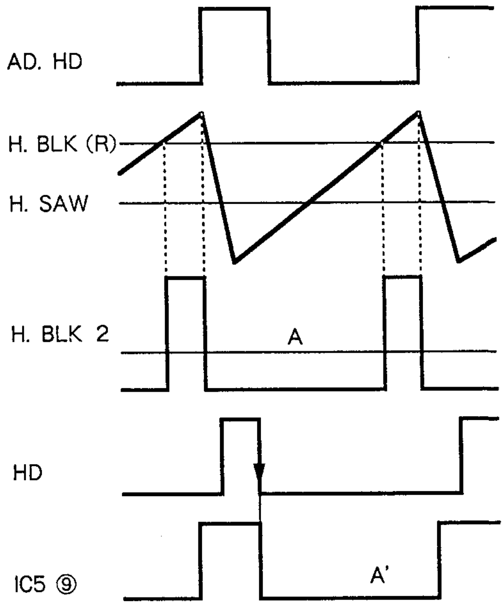


Fig. 7

(3) SIZE ABL CIRCUIT…Since ABL circuit is a total high – voltage limiter, when its size is halved, the current density per unit area is doubled. This can become the cause for partial burning of the tube surface and cracking of the CRT due to heat concentration. This set has a particularly wide size range, the current density can become several times larger. For this reason, a SIZE ABL circuit, which keeps the current density per unit area fixed, was added. Control voltage H. SIZE and V. SIZE are multiplied and the result added to the ABL detection point, as shown in Fig. 8. As a result, the detecting voltage is changed. The ABL is therefore being changed through the use of SIZE.

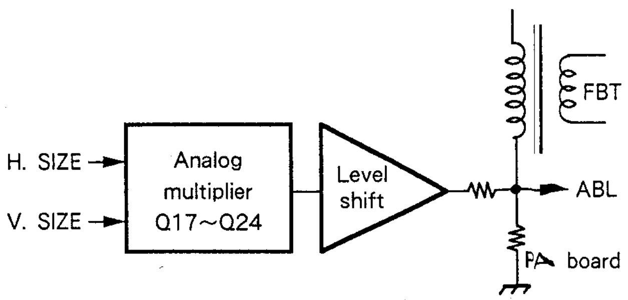


Fig. 8

3-5. CIRCUIT BOARD DB

This board incorporates functions of conventional registration matrix VR as well as those of various other control VRs. The features of D/A converter MB86023 are as follows :

Pins① to ⑧	...	DATA input (standard input)
Pins ⑨ and ⑩	...	control terminal that selects 1 of 4 possible outputs
Pin ⑪	...	reads DATA upon receipt of a pulse
Pin ⑫	...	activated when low
Pin ⑬	...	digital GND
Pin ⑭	...	analog GND
Pin ⑮	...	−5V
Pins ⑯ to ⑲	...	output
Pin ⑳	...	input for reference voltage
Pin ㉒	...	+5V

The voltage produced in reference to input voltages V1 is −V1 for DATA 00, 0 for DATA 80, and V1 for DATA FF. IC501 to 504 are buffers while IC505 to 510 are address decoders. The output and the name associated with each signal are shown below :

IC511 ⑲H.SIZE ⑱H.CENT (G) 1 ⑰H.CENT (R) 1 ⑯H.CENT (B) 1	IC512 ⑲H.SHIFT ⑱H.CENT (G) 2 ⑰H.CENT (R) 2 ⑯H.CENT (B) 2
IC513 ⑲H.KEYS ⑱H.SKEW (G) ⑰H.SKEW (R) ⑯H.SKEW (B)	IC514 ⑲H.PIN ⑱H.BOW (G) ⑰H.BOW (R) ⑯H.BOW (B)
IC515 ⑲ --- ⑱H.SIZE (G) ⑰H.SIZE (R) ⑯H.SIZE (B)	IC516 ⑲H.LIN BIAS (R) ⑱H.LIN (G) ⑰H.LIN (R) ⑯H.LIN (B)
IC517 ⑲V.KEYS BIAS (B) ⑱ --- ⑰V.KEYS H (R) ⑯V.KEYS H (B)	IC518 ⑲ --- ⑱ --- ⑰H.PIN (R) ⑯H.PIN (B)
IC519 ⑲V.SIZE ⑱V.CENT (G) 1 ⑰V.CENT (R) 1 ⑯V.CENT (B) 1	IC520 ⑲V.SHIFT ⑱V.CENT (G) 2 ⑰V.CENT (R) 2 ⑯V.CENT (B) 2
IC521 ⑲V.SIZE BIAS ⑱V.SIZE (G) ⑰V.SIZE (R) ⑯V.SIZE (B)	IC522 ⑲V.LIN BIAS ⑱V.LIN (G) ⑰V.LIN (R) ⑯V.LIN (B)
IC523 ⑲ --- ⑱V.SKEW (G) ⑰V.SKEW (R) ⑯V.SKEW (B)	IC524 ⑲ --- ⑱V.BOW (G) ⑰V.BOW (R) ⑯V.BOW (B)
IC525 ⑲V.KEYS BIAS (R) ⑱V.KEYS (G) ⑰V.KEYS (R) ⑯V.KEYS (B)	IC526 ⑲ --- ⑱V.PIN (G) ⑰V.PIN (R) ⑯V.PIN (B)
IC527 ⑲ --- ⑱H.ZONE 2 (G) ⑰H.ZONE 2 (R) ⑯H.ZONE 2 (B)	IC528 ⑲ --- ⑱H.ZONE 3 (G) ⑰H.ZONE 3 (R) ⑯H.ZONE 3 (B)
IC529 ⑲H.ZONE 4 BIAS ⑱H.ZONE 4 (G) ⑰H.ZONE 4 (R) ⑯H.ZONE 4 (B)	IC530 ⑲H.ZONE 5 BIAS ⑱H.ZONE 5 (G) ⑰H.ZONE 5 (R) ⑯H.ZONE 5 (B)
IC531 ⑲ --- ⑱H.ZONE 6 (G) ⑰H.ZONE 6 (R) ⑯H.ZONE 6 (B)	IC532 ⑱H.ZONE 7 (G) ⑰H.ZONE 7 (R) ⑯H.ZONE 7 (B)
IC533 ⑱H.ZONE 8 (G) ⑰H.ZONE 8 (R) ⑯H.ZONE 8 (B)	IC534 ⑱H.ZONE 9 (G) ⑰H.ZONE 9 (R) ⑯H.ZONE 9 (B)
IC535 ⑱V.ZONE 2 (G) ⑰V.ZONE 2 (R) ⑯V.ZONE 2 (B)	IC536 ⑱V.ZONE 3 (G) ⑰V.ZONE 3 (R) ⑯V.ZONE 3 (B)
IC537 ⑱V.ZONE 4 (G) ⑰V.ZONE 4 (R) ⑯V.ZONE 4 (B)	IC538 ⑱V.ZONE 5 (G) ⑰V.ZONE 5 (R) ⑯V.ZONE 5 (B)
IC539 ⑱V.ZONE 6 (G) ⑰V.ZONE 6 (R) ⑯V.ZONE 6 (B)	IC540 ⑱V.ZONE 7 (G) ⑰V.ZONE 7 (R) ⑯V.ZONE 7 (B)

IC541 ⑲ --- ⑱V.ZONE 8 (G) ⑰V.ZONE 8 (R) ⑯V.ZONE 8 (B)	IC542 ⑲ --- ⑱V.ZONE 9 (G) ⑰V.ZONE 9 (R) ⑯V.ZONE 9 (B)
IC543 ⑲SHARPNESS ⑱COLOR ⑰HUE ⑯VOLUME	IC544 ⑲DRIVE (G) ⑱DRIVE (R) ⑰DRIVE (B) ⑯CONTRAST
IC545 ⑲BACK GROUND(G) ⑱BACK GROUND(R) ⑰BACK GROUND(B) ⑯BRIGHT	IC546⑲BLANKING (T) ⑱BLANKING (B) ⑰BLANKING (L) ⑯BLANKING (R)

3-6. CIRCUIT BOARD DC

The DC board consists of : (1) V. OUT circuitry. and (2) SUB. OUT circuitry.
(1) V. OUT circuitry.
(2) SUB. OUT circuitry.
Both circuits are common for R, G, and B.

3-6-1. V. OUT CIRCUITRY

1) V. OUT···consists of μPC4558 and μPC1498. As it is common to all 3 channels, here the G－ch will be explained. A V. OUT waveform is input into pin ③ of connector DC－2 from the DB board.(Fig. 1 A). Although this is input into pin ③ of IC5, since pin ② of IC5 is a GND, a waveform similar to the one shown in B (Fig. 1) is feedback and pin ③ of IC5 becomes a GND.
   Any voltage error that exists between pins ② and ③ of IC5 will be output from pin ① of IC5 (Fig. 1 C) and is received by pin ④ of IC6. The output is through pin ② and a electric current like the one shown in B (Fig. 2) flows. As a result a voltage waveform similar to D (Fig. 1) is generated. E (Fig. 1) is the pulse power supply, and is created by μPC1498 which detects the erroneous portion of the pulse of the input waveform C (Fig. 1) and by accumulating D5 and D10.

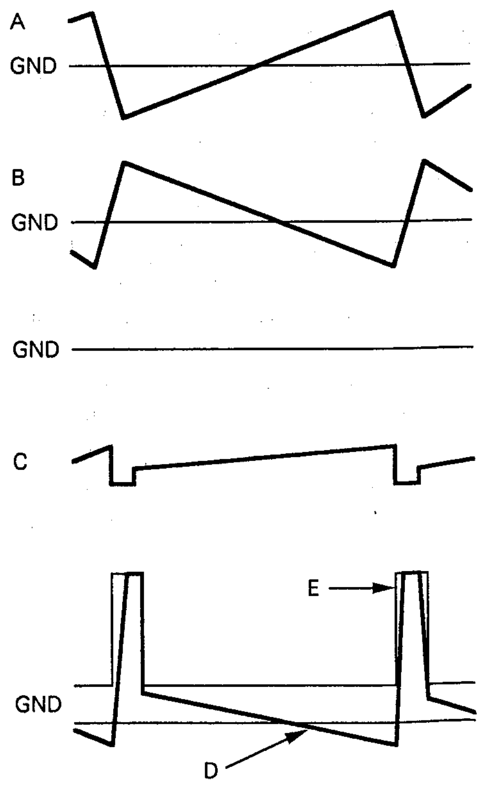


Fig. 1

2) V. STOP PROT.···Slice the pulse at the output (pin ② of IC6) V. OUT. If C14 does not exist, the waveform of collector Q2 will be a pulse waveform such as in A (Fig. 2). Practically – speaking, it will be integrated by C14 and become a saw wave like the one in B (Fig. 2). If an abnormality is encountered in V. deflection, as shown in D (Fig. 1), the pulse voltage will disappear and the Q2 collector will attach to + B. When this happens, C14 gradually gets charged as shown by the dotted points in B (Fig. 2) and exceeds the pin ⑥ IC5 which is the comparing voltage, causing pin ⑦ of IC5 to become H, Q4 to turn ON, and Q5 to turn OFF. This is the V. STOP mode.

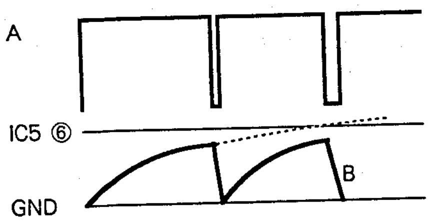


Fig. 2

3) V. PULSE···To output V. PULSE for V. BLK use, slice the V. OUT pulse with IC9 and feed it through D10 and Q6. Note that V. STOP signal is added at D9 so that a BLK is applied during V. STOP.

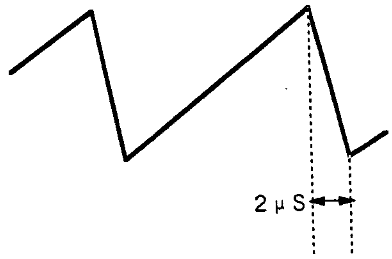
3-6-2. SUB OUT CIRCUITRY

1) SUB OUT···Since all of the 6 channels (R, G, B, H. SUB, V. SUB) uses the same circuit, we will explain about H. SUB (R) in this section. The waveform input int pin ① of connector DC – 3 will be amplitude – adjusted by IC101. IC301 is a reverse adjustment circuit provided as protection against current overloads. Pin ② of IC301 is the input while pin ③ is the return. Pin ⑥ is the OUT for the voltage error between input and output. As frequency performance is important, the gain for operational amplifier will be kept Low and a discrete amplifier used. For the discrete amplifier section also, we have used an active load rather than a negative load. This constant – current circuit is comprised of D302, Q301, and R318, and has a current flow of 18mA.

2) PULSE POWER SOURCE···The current required to produce a correcting waveform with a retrace of 2 μs and H. SAW waveform with 1.5Ap – p will be – 30V, as the following shows :

$$V = -L\frac{di}{dt} = -40\ (\mu H)\frac{1.5\ (A)}{2\ (\mu S)} = -30V$$

For this reason, PULSE power supply is used only for return lines.
AD. HD is added to pin ① of connector DC – 13, and the + side PULSE created at Q105 and the – side PULSE at Q105. The PULSE power supply is produced by adding ± 15V to each of these PULSES.



3) CURRENT LIMITER···This is a limiter circuit for negative overloads on ± 15V lines. The + 15V side is made up of Q9, R64, and 76. When current flows through the base – emitter resistance and exceeds the transistor's V_{BE}, Q9 is turned ON and is added to V. STOP PROT. The limiter current is approximately 4A.
Same for the – 15V side.

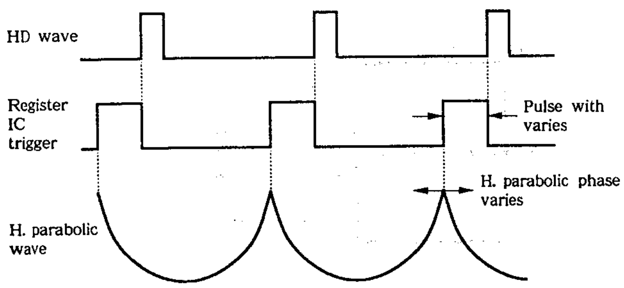
3-7. CIRCUIT BOARD DD

The DD board has the following two functions.

- Generation of H. parabolic sine wave for magnet focus (MG focus)
- Generation of zone correction wave

3-7-1. GENERATION OF H. PARABOLIC SINE WAVE FOR MAGNET FOCUS

The H. parabolic sine wave for magnet focus is generated in the IC3 register IC. For generating the H. parabolic sine wave, it would be enough to input the HD pulse into the register IC as a trigger, but since it is necessary to control the phase of the H. parabolic wave with phase adjustment, a separate pulse is made from the HD pulse with the IC1 monostable multivibrator and used as the trigger for the register IC. The pulse width is controlled with DC voltage from the outside. The IC trigger timing is varied by varied by varying the pulse width and the phase of the H. parabolic wave is controlled by the exterminal DC voltage. Here the register IC is used exclusively as a generator for the H. parabolic wave for magnet focus.



The DC H. Phase signal from the outside is applied to the base of constant current source Q3. The value of H. Phase varies the collector current at pin ① of Q3, which in turn varies the slope of the sawtooth wave generated at C02, and this varies the width for the pulse output from monostable multivibrator IC1. The inverse of this pulse (pin ⑨ of IC1) is intergrated and compared with the result of integrating register IC trigger pulse (pin ⑦ of IC1) non-inverted output (pin ⑥ of IC1). The result generates a sawtooth wave at C09 with constant current source Q4 as the power source. A loop is formed in which the slope of this sawtooth wave determines the width for the register IC trigger pulse (pin ⑦ of IC1).

This trigger pulse is input to pin ㉔ of register IC3 as a trigger and the H. parabolic wave is output from pin ⑱. The amplitude of the H. parabolic wave must be varied according to the size of H Size, so the DC H. Size signal is input at pin ㉕ of the register IC to control the gain.

The H. parabolic waveform output from pin ⑱ of the resister IC is amplified by IC2 (1/2) and output. In IC2 the level is set so that when the horizontal size is maximum, the amplitude is 3V.

3-7-2. ZONE CORRECTION WAVE GENERATION

The 12 types of waves for zone correction are generated with multipliers and switching circuits. Q35 through Q37 generate the pulses needed for 1/2V and switching in the switching circuits. A 1/2V pulse is input to one of the bases of the pair of Q37 transistors and the standard DC voltage is applied to the other base. 1/2V pulses with different phases are taken out from the collectors. 1/2H pulses with defferent with defferent phases are taken out in the same way from the collectors of the pair of Q36 transistors.

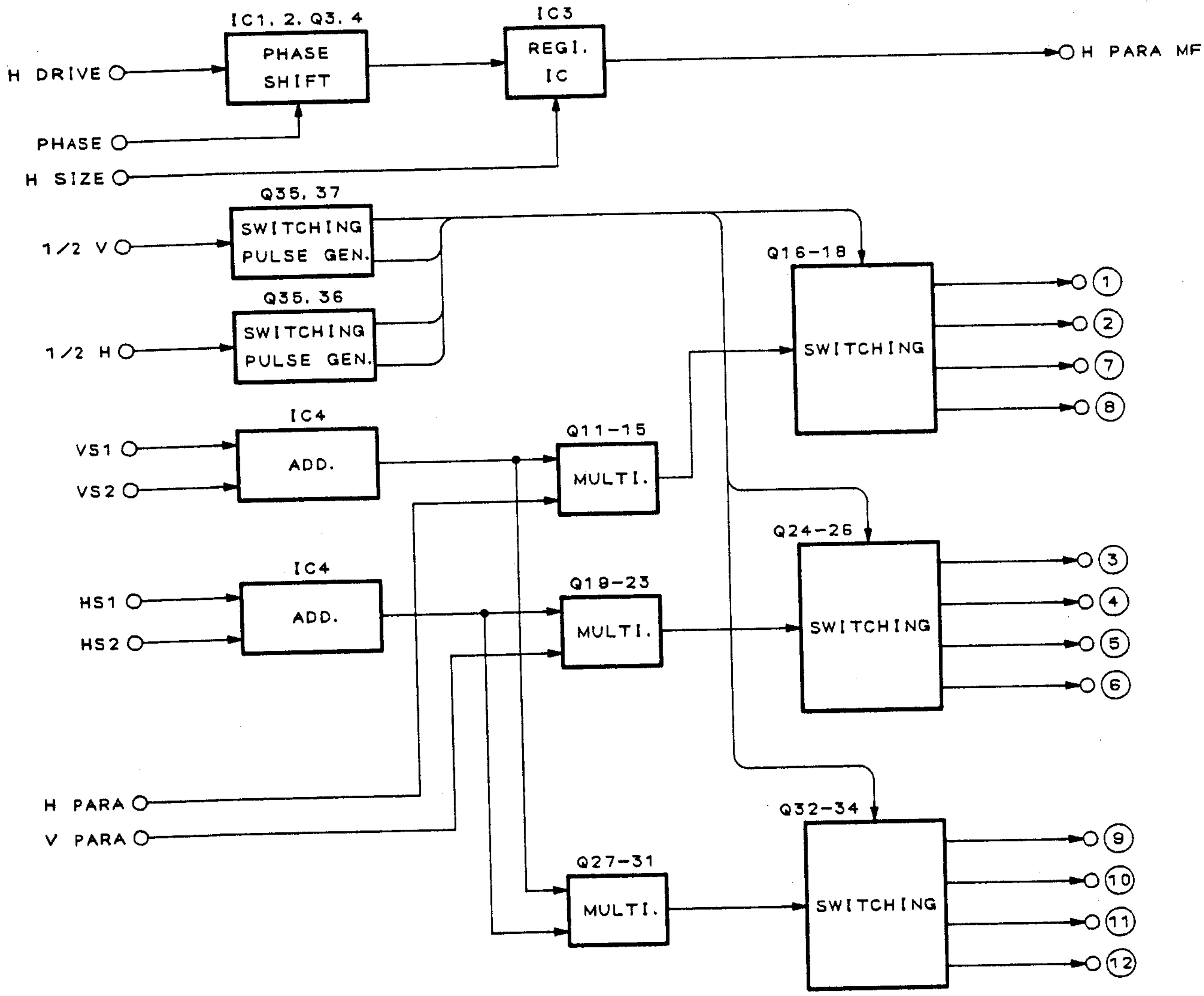
IC4 (1/2) subtracts half-cycle sine wave VS2 from half-cycle sine wave VS1 and in the same way IC4 (2/2) adds HS1 and HS2.

Q11-15, Q19-23, and Q27-31 comprise multipliers. Q11-15 multiply VS1-VS2 and the H. parabolic signal. The result is taken out from pin ① of Q13 as a current signal. This current is switched with 1/2V and 1/2H timing in the switching circuit comprising Q16-18 and four types of corrected waves are taken from the correctors of the pair of Q17 and Q18 transisters as voltage signals.

Q19-23 multiply HS1+HS2 and the V. parabolic signal. The result passes through the switching circuit comprising Q24-26 and four types of corrected waves are taken from the correctors of the pair of Q25 and Q26 transistors.

Q27-31 multiply VS1-VS2 and HS1+HS2. The result passes through the switching circuit comprising Q32-34 and four types of corrected waves are taken from the correctors of the pair of Q33 and Q34 transistors.

DD Board Block Diagram



3-8. CIRCUIT BOARD DE

The DE board synthesizes the attenuation waves for the zone correction and magnet focus correction waves. Here is an explanation of these functions.

3-8-1. OPERATIONS

The zone correction wave and magnet focus correction wave attenuation is carried out by digital attenuators (MB86023) IC510 – 536. Data signals D0 – D7, address signals A0 – A7, and the WR write clock are input and are sent through the buffer (HD74HC244) comrising IC501 – 504. Of the signals that have passed through the buffer, data signals D0 – D7, address signals A0 and A1, and the writing clock WR are sent directly to the digital attenuator circuit comprising IC510 – 536. Address signal A2 – A7 are decoded by the address decoder (HD74HC138) comprising IC505 – 509 and input to the CE pin of the digital attenuator circuit comprising IC510 – 536 to select the chip.

The digital attenuator (MB86023) has four channels of 8 – bit voltage output D/A converters and data latch and output buffer circuits for each channel. Each channel operates independently with the channel selected by A0 and A1.

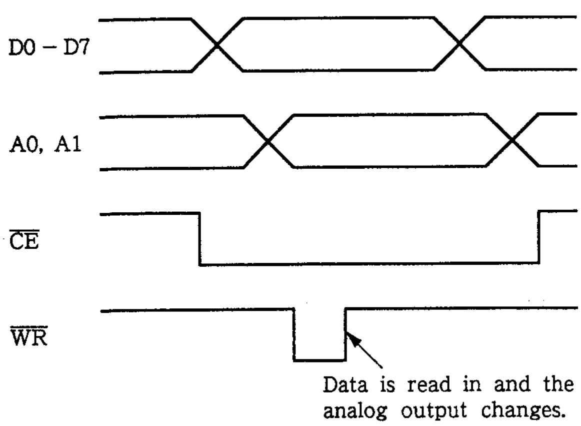
Of these four channels, one each is allocated to R, G, and B.

<Channel selection>

A0	A1	ch
L	L	0 (B)
H	L	1 (R)
L	H	2 (G)
H	H	3

When the CE signal is Low at the rising edge of the write clock WR, the data from D0 to D7 is written.

<Data setting timing>



ICs 510 – 517 and 526 – 529 attenuate the horizontal zone correction wave and ICs 518 – 525 and 533 – 536 attenuate the vertical zone correction wave.

The zone correction wave is input to each digital attenuator and the digital attenuator channel corresponding to address signals A0 – A7 is selected. The input zone correction wave is attenuated according to the value of data signals D0 – D7.

Input wave	Data (D0 – D7)	Output wave
Example : parabolic wave 	00	
	80	
	FF	

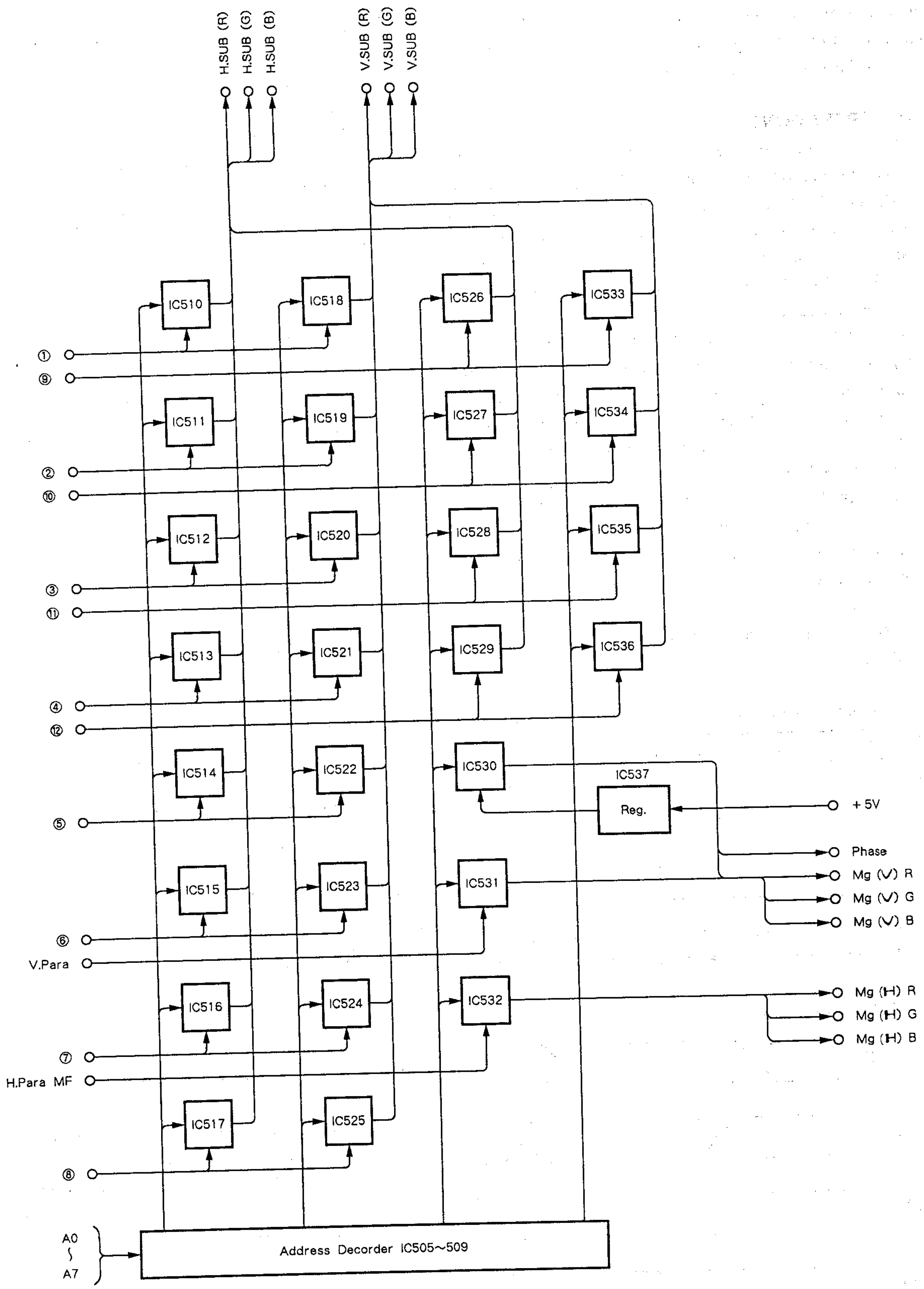
When the data is 00, the output wave is the input wave inverted ; when the data is 80, the output wave is 0 ; and when the data is FF, the output wave is the same as the input wave. IC530 – 532 attenuate the magnet focus wave.

The DC signal is input to IC530, the V. parabolic signal is input to IC531, and the H. parabolic signal is input to IC532. Each is attenuated according to the data. A bias component is added to the V. parabolic and H. parabolic signals, so that when the data is 00, the output wave is 0 ; when the data is 80, the output wave is 1/2 the input wave ; and when the data is FF, the output wave is the same as the input wave.

Input wave	Data (D0 – D7)	Output wave
H. parabolic wave V. parabolic wave 	00	
	80	
	FF	

The output from IC501 – 536 is added in the IC538 – 542 operational amplifier and output as the V. SUB (R), V. SUB (G),V. SUB (B), H. SUB (R), H. SUB (G), H. SUB (B), MF (R) V, MF (G) V, MF (B) V, MF (R) H, MF (G) H, and MF (B) H.

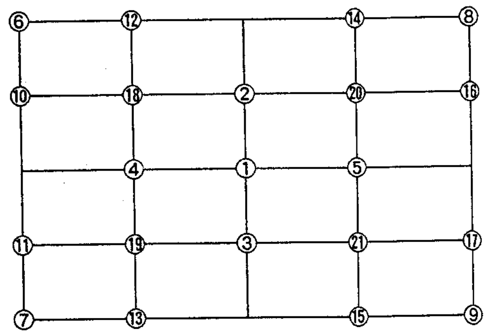
DE Board Block Diagram



3-8-2. DIGITAL ATTENUATOR (IC510 – IC536) ALLOCATION

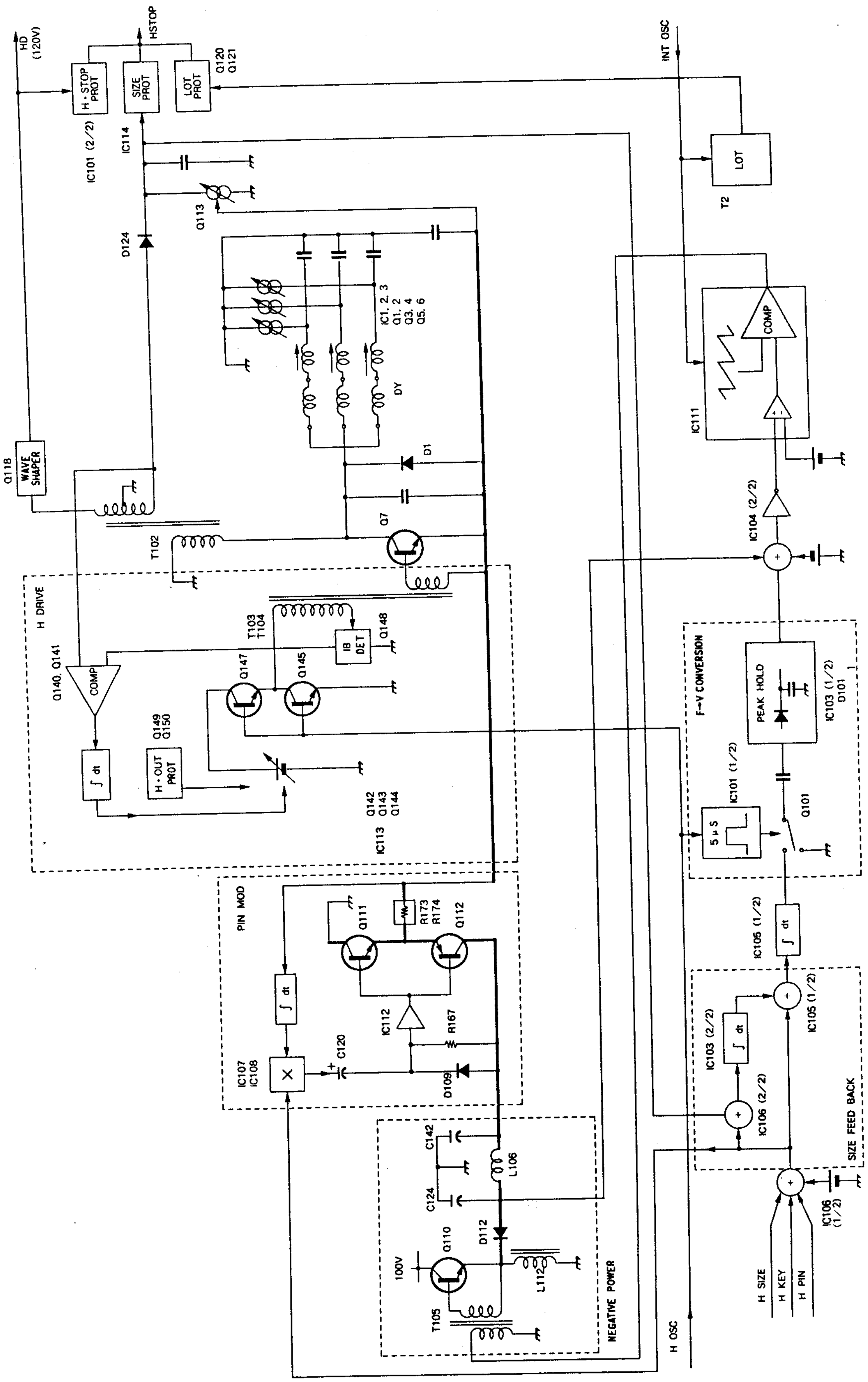
IC510 ⑯ZONE ⑩H-B ⑰ZONE ⑩H-R ⑱ZONE ⑩H-G ⑲ – – –	IC511 ⑯ZONE ⑪H-B ⑰ZONE ⑪H-R ⑱ZONE ⑪H-G ⑲ – – –
IC512 ⑯ZONE ⑫H-B ⑰ZONE ⑫H-R ⑱ZONE ⑫H-G ⑲ – – –	IC513 ⑯ZONE ⑬H-B ⑰ZONE ⑬H-R ⑱ZONE ⑬H-G ⑲ – – –
IC514 ⑯ZONE ⑭H-B ⑰ZONE ⑭H-R ⑱ZONE ⑭H-G ⑲ – – –	IC515 ⑯ZONE ⑮H-B ⑰ZONE ⑮H-R ⑱ZONE ⑮H-G ⑲ – – –
IC516 ⑯ZONE H-B ⑰ZONE H-R ⑱ZONE H-G ⑲ – – –	IC517 ⑯ZONE H-B ⑰ZONE H-R ⑱ZONE H-G ⑲ – – –
IC518 ⑯ZONE ⑩V-B ⑰ZONE ⑩V-R ⑱ZONE ⑩V-G ⑲ – – –	IC519 ⑯ZONE ⑪V-B ⑰ZONE ⑪V-R ⑱ZONE ⑪V-G ⑲ – – –
IC520 ⑯ZONE ⑫V-B ⑰ZONE ⑫V-R ⑱ZONE ⑫V-G ⑲ – – –	IC521 ⑯ZONE ⑬V-B ⑰ZONE ⑬V-R ⑱ZONE ⑬V-G ⑲ – – –
IC522 ⑯ZONE ⑭V-B ⑰ZONE ⑭V-R ⑱ZONE ⑭V-G ⑲ – – –	IC523 ⑯ZONE ⑮V-B ⑰ZONE ⑮V-R ⑱ZONE ⑮V-G ⑲ – – –
IC524 ⑯ZONE ⑯V-B ⑰ZONE ⑯V-R ⑱ZONE ⑯V-G ⑲ – – –	IC525 ⑯ZONE ⑰V-B ⑰ZONE ⑰V-R ⑱ZONE ⑰V-G ⑲ – – –
IC526 ⑯ZONE ⑱H-B ⑰ZONE ⑱H-R ⑱ZONE ⑱H-G ⑲ – – –	IC527 ⑯ZONE ⑲H-B ⑰ZONE ⑲H-R ⑱ZONE ⑲H-G ⑲ – – –
IC528 ⑯ZONE ⑳H-B ⑰ZONE ⑳H-R ⑱ZONE ⑳H-G ⑲ – – –	IC529 ⑯ZONE ㉑H-B ⑰ZONE ㉑H-R ⑱ZONE ㉑H-G ⑲ – – –

IC530 ⑯M.F.(DC)-B ⑰M.F.(DC)-R ⑱M.F.(DC)-G ⑲PHASE	IC531 ⑯M.F.(V)-B ⑰M.F.(V)-R ⑱M.F.(V)-G ⑲M.F.(V)-max (固定)
IC532 ⑯M.F.(H)-B ⑰M.F.(H)-R ⑱M.F.(H)-G ⑲M.F.(H)-max (固定)	IC533 ⑯ZONE ⑱V-B ⑰ZONE ⑱V-R ⑱ZONE ⑱V-G ⑲ – – –
IC534 ⑯ZONE ⑲V-B ⑰ZONE ⑲V-R ⑱ZONE ⑲V-G ⑲ – – –	IC535 ⑯ZONE ⑳V-B ⑰ZONE ⑳V-R ⑱ZONE ⑳V-G ⑲ – – –
IC536 ⑯ZONE ㉑V-B ⑰ZONE ㉑V-R ⑱ZONE ㉑V-G ⑲ – – –	



Zone adjustment points ①–㉑
*The DE board handles attenuation of ⑩–㉑. The DB board handles attenuation of ②–⑨.

3-9. CIRCUIT BOARD E



3-9-1. F-V CONVERSION

H－KEY, H－PIN and H－SIZE are input throught E－1 connector and added at IC106 (1/2). This output,
(a) passes R131 and is input to IC105.
(b) is input to IC106 (2/2) and compared with H－SIZE detection output. The error difference is input to IC103 (2/2) and fully integrated and amplified, which then passes R186 and is input to IC105.
It is again fully integrated at IC105 (1/2). This DC passes R103 and switched by Q101. IC101 (1/2) generates pulse which is synchronous to 5 μ s width fH and inputs it to Q101 gate.
Here, voltage proportional to H－SIZE voltage and fH, is generated. This output passes IC102 buff, is integrated at R111, C105, R109 and C104, and output at IC104 (1/2) to complete F－V conversion.

3-9-2. NEGATIVE POWER SECTION

F－V conversion output and negative power is compared at IC104 (2/2) and added to IC111 pin ①.
IC105 (2/2) generates bias and adds it to IC104 (2/2). IC111 is a switching regulator IC, and outputs pulse which complies to pin ⑭ and pin ① voltage, to pin ⑦. This pulse is switched at Q109 and drives Q107, 108, and the output drives Q110 through T105.
Pulse output to Q110 source is rectifide at D112, C124 to generate negative power. R208 is for current detection and IC111 pin ⑤ is connected at top end to protect against over current.

3-9-3. PIN MOD SECTION

H－KEY, H－PIN correction wave is input through E－1 connector, added at IC106 (1/2) and output from pin ⑦. This output passes IC110 and is input to IC107 pin ④. On the other hand, PIN MOD OUT voltage divided by R150, R285 and R149 is input to IC107 pin ⑨. With these two inputs, PIN MOD correction voltage which corresponds to fH and H－SIZE is output to IC107 pin ⑭. This output is amplified at IC108, passes Q103 and Q104 buff, and is input to IC112. When this occurs, PIN MOD correction wave is clamped to negative power by IC109. IC112 operates around negative power electric potential. Q111, 112 are driven by voltage output from IC112 pin ①and PIN MOD OUT voltage is output to Q111, 112 source.

3-9-4. H-DRIVE SECTION

H. OSC is input from E－1 connector pin ⑤, passes R233 and input to Q130, 131 base. The signal is divided into two by Q130, 131 emitter.
One signal passes C161 and input to Q145 gate. Q145, 146, 147 are Trs for Per－Drive. These Trs switch Q7 (H.OUT) through T103, 104 (HDT). The other signal passes R234 and is input to IC113 (1/2). IC113 output pulse becomes saw－tooth wave at R238, C150. Q132 is a constant current source. Pulse is compared at Q133 and 134 to control Q132 constant current source and keep saw－tooth wave amplitude constant.

This saw－tooth wave and IB2 constant circuit output voltage, which will be explained later, are compared at IC113 (2/2) and the pulse difference is output to IC113 pin ⑦. This pulse passes Q135, 136 buff and input to Q142 gate. Q142, D118 and C159 construct a STEP UP regulator. Normally, 100V is supplied to Q143 and Q144 collector, but when Q142 switch, the additional voltage is supplied to Q143 and Q144 collector, Q144 emitter is connected to Q146, 147 collector. Normally, 100V power is supplied through Q143, 144 series regulator, but when more drive is needed, Q142 operates to supply power over 100V.

IB2 Constant Circuit

Current (IB) which flows on the primary side of T103, 104 (H. D. T) is detected at R267, 268 and generated as voltage at Q148 collector. This voltage passes R225 and input to Q140 base. In the meantime, H. O. T. secondary side H. Pulse divided by R259, 260 and R259 is input to Q141 base. By comparing the peak voltage of the two, IB2 is always remaind constant.

- H. Pulse > At IB2 peak (under－drive)
  Q140 cut off → Q139 base potential rise → Q139 collector potential lowers → Q137 base potential lowers → Q137 collector potential rises → Q144 emitter potential rises → to over－drive.

- H. Pulse < At IB2 peak (over－drive)
  Q141 cut off → Q139 base potential lowers → Q139 collector potential rises → Q137 base potential rises→ 137 collector potential lowers → Q144 emitter potential lowers → to under－drive.
  Feed Back is conducted as above.

3-9-5. H-SIZE FEED BACK SECTION

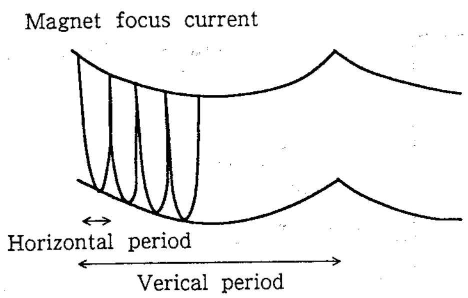
H. O. T. secondary side H. Pulse is peak rectified at D124 to convert it to H. SIZE detection output.
Q113 is a variable current source, and works to get the same detection out puteven when fH is different at the same pulse height. This output is returned to IC106 (2／2), compared with input and the error difference is controlled.

3-9-6. HD OUTPUT SECTION AND H. STOP PROTECTOR SECTION

AFC HD clamps H. O. T. secondary side H. Pulse at C144, D113, re－shapes the wave at Q118, passes pulse through Q116, 117 and outputs from E－1 connector pin ⑨.
HD output from Q116, 117 emitter is input to IC101 pin ⑪. As long as HD is input to IC101 pin ⑪, pin ⑩ is High. Therefore, Q115 is ON and H. STOP line is normally Low. If HD is not input, IC101 pin ⑩ becomes Low and Q115 turns OFF and as a result, H. STOP line becomes High and set power turns OFF.
Other protectors are H－SIZE MAX／MIN protector and 100V line LOT circuit over current protector.
IC114 detects H－SIZE MAX／MIN.
When H－SIZE becomes too large, IC114 pin ① becomes Low.
When H－SIZE becomes too small, IC114 pin ⑦ becomes Low.
This output passes D139 and connects to IC101 pin ⑬.
When pin ⑬ becomes Low, IC101 pin ⑩ becomes Low and protector actuates.
L. O. T. circuit over current protector detects current at R221. When there is over－current, first Q120 turns ON and then, Q121.
Q121 collector is connected to IC114 pin ①, ⑦ line, and protector actuates as above.

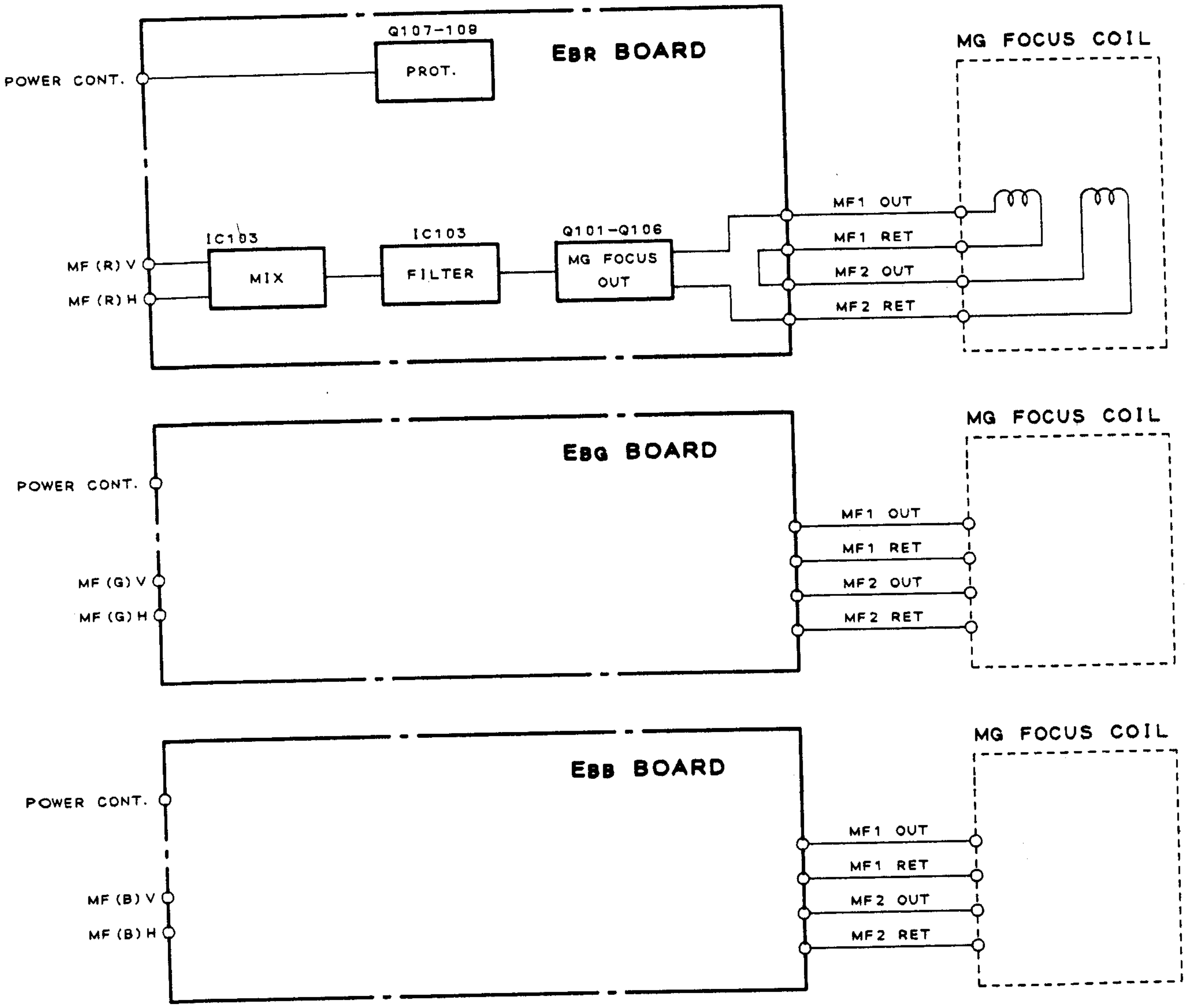
3-10. CIRCUIT BOARDS EB (R, G, AND B)

This board has the magnet focus output circuit.
Here is an explanation of how this circuit works.
This circuit is a fixed current amplifier for the current that flows through the magnet focus coils in response to the magnet focus MF (V) and MF (H) signals.
The magnet focus MF (V) (V. PARA and DC component) and MF (H) (H. Para) signels have the DC bias voltage divided by R28 and R29 added at the operational amplifier (IC3 (2/2)).
Next, the signals go through the filter made up of IC3 (1/2), R6 – 11, and C7 – 9. This filter has been put together with a characteristic opposite to that of the f characteristic of the magnet focus coils in order to cancel that f characteristic. After passing through this filter, the signals are input to one side (the base of Q1) of the differential amplifier made up of Q1 and Q2. From the collector of Q1, the signals go to the base of Q4 in the drive stage and are amplified as the load on fixed current source Q3. Finally, they pass through the complementary buffer made up of Q5 and Q6 and flow into the magnet focus coils.
The magnet focus coils are two coils connected in series. Dynamic focus is applied by passing direct current and vertical period and horizontal period parabolic currents through the coils.



The current flowing through the magnet focus coils is detected by R16 and returned to the other side (the base of Q2) of the defferential amplifier. R25 and R26 protect against overcurrent and determine the bias. C15 is inserted between the collector and base of Q4 in the drive stage to protect against oscillation due to slight drops in the f characteristic. R23, C16, R24 and C17 make up a filter for the ± 35 V lines. If the voltage of the + 12 V line falls, Q8 coems on and if the voltage of the – 12 V line rises, Q9 comes on. Either of these transistors coming on triggers the protector to switch off the power for the set.

EB (R, G, and B) Board



3-11. CIRCUIT BOARD L

This board comprises the lens focus drive circuit and the error code display section. Here are explanations of both these functions.

3-11-1. LENS FOCUS DRIVE CIRCUIT

Special ICs, TA7267BP (ICs 2－4), are used to drive the lens focus. These ICs can drive the motor forward and reverse width a single power supply. The forward, reverse, brake, and stop modes can be selected by the appropriate combination of High and Low signals at control pins IN1 and IN2.

IN1	IN2	OUT1	OUT2	Mode
H	H	L	L	Brake
H	L	H	L	Forward (contraction)
L	H	L	H	Reverse (expansion)
L	L	High Impe		Stop

Limit switches protect the lens drive section.

3-11-2. CODE DISPLAY

Data signals D0－7 pass through the IC6 (TC74HC541P) buffer, are decoded by ICs 7 and 8 (MC1449P1), and are displayed on 2 digits of 7－segment LEDs. The codes displayed are the protector codes, RS422 communication error codes, data saving codes, and self－check codes.

- Message code list

Here is a list of the codes displayed on the two digits of 7－segment LEDs on this board. whenever any of these codes is displayed, the LEDs on the Y board light up as well.

1) Protector codes

Whenever any of the protectors is triggered, the appropriate one of the following codes is displayed, and the power is shout off automatically.

CODE	FAN stop	H-stop	IK-over	V-stop	HV-over	power-down
01....	*	-	-	-	-	-
02....	-	*	-	-	-	-
03....	*	*	-	-	-	-
04....	-	-	*	-	-	-
05....	*	-	*	-	-	-
06....	-	*	*	-	-	-
07....	*	*	*	-	-	-
08....	-	-	-	*	-	-
09....	*	-	-	*	-	-
0A....	-	*	-	*	-	-
0b....	*	*	-	*	-	-
0C....	-	-	*	*	-	-
0d....	*	-	*	*	-	-
0E....	-	*	*	*	-	-
0_....	*	*	*	*	-	-
10....	-	-	-	-	-	-
11....	*	-	-	-	*	-
12....	-	*	-	-	*	-
13....	*	*	-	-	*	-
14....	-	-	*	-	*	-
15....	*	-	*	-	*	-
16....	-	*	*	-	*	-
17....	*	*	*	-	*	-
18....	-	-	-	*	*	-
19....	*	-	-	*	*	-
1A....	-	*	-	*	*	-
1b....	*	*	-	*	*	-
1C....	-	-	*	*	*	-
1d....	*	-	*	*	*	-
1E....	-	*	*	*	*	-
1_....	*	*	*	*	*	-
20....	-	-	-	-	*	*

- When one of the above codes is displayed, the immediately preceding adjustment data is lost.
- When the system is restored by switching the main power off, then on again or by switching the power off, then on with the commander, the code display goes out.

2) RS422 communication error codes
   A0 …… Receive time out error (The time between bytes of the receiving data was too long.)
   A1 …… Handshake error (There was an error in the handshake exchange with the master.)
   A2 – AE
      bit1 …… Overrun error (The next data came before the data before it was read.)
      bit2 …… Parity error (An error was found in the odd/even parity bit.)
      bit3 …… Framing error (No stop bit was detected.)
   - Error code display has no effect on normal software.
   - When the next communication is carried out normally, the error code display goes out.

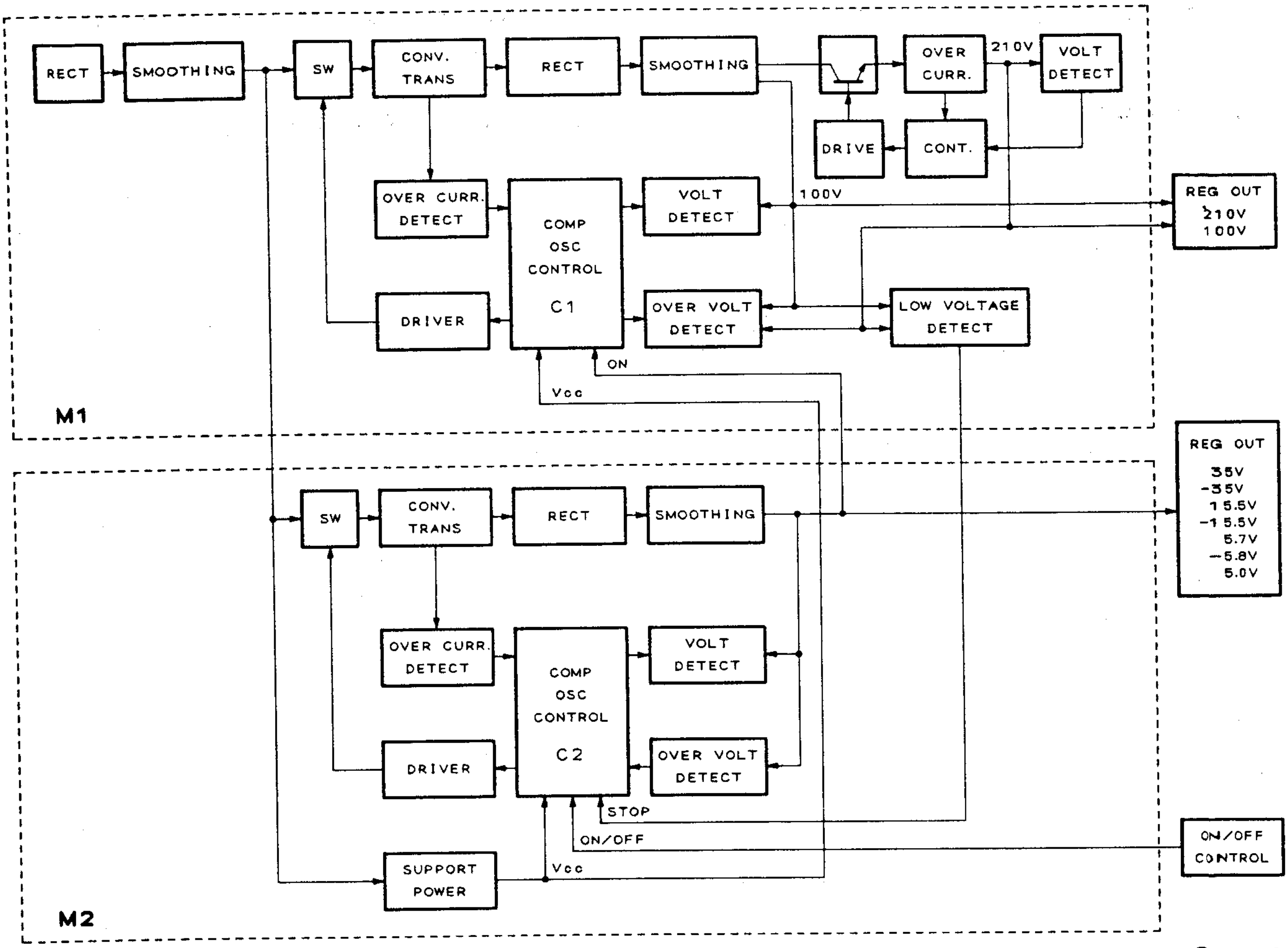
3) Data saving code
   These codes are displayed during block copying of data to the backup memory (EEPROM).
   C0 …… EEPROM initialization (all data initialized)
   C1 …… factory shipping data set (All the adjustment data at this point in time is registered as the factory shipping data.)
   C2 …… User memory reset (Returns all the adjustment data to the factory shipment data settings.)
   C3 …… Data saving when the memory key was pressed or the power switched off (Necessary items are saved into nonvolatile memory.)
   - During display of any of the above codes, normal operations do not work.
   - These codes go out at the completion of block transfer. (This takes about one minute at the most.)
   - If one of these codes stays on for more than two minutes, either there has been a tape save error or a breakdown.

4) Self – check code
   These codes show that the self – diagnostics program is being executed. (The self – diagnostics program is executed primarily when the power is switched on).
   E0 …… trap error (The program was not executed normally because of a momentary power failure or other reason.)
   E1 …… RAM check
   E2 …… ROM check
   E3 …… EEPROM check
   E4 …… PIO check
   - When E0 is displayed, the immediately preceding adjustment data may not have been saved, so check it.
     However, operations during display of this code are normal.
   - Except for E0, these codes are displayed only briefly (until the completion of the check) and go out when the check finds the system normal. If the system is found to be abnormal, the self – check code display continues. In this case, the only function that works is the power off function.
   - When the E4 code lights up, the LED on the Y board blinks. (Pressing SW – 2 at this time resets the st – memory.)

3-11-3. INTERNAL TIMER

This system has a specias RGB timer for showing the CRT usage time. This timer works in units of 1000H and displays up to 10,000 hours.

3-12. CIRCUIT BOARD SOPS-1008



This power supply comprises two half bridge converters and one self－exciting flyback converter (auxiliary power supply). When the main power switch is switched on, the auxiliary power supply works first, supplying voltage to the C1 and C2 boards on the M1 board, and the control IC (IC51) operates. At this point in time, the power supply does not operate, the ON signal (about 5V) from the outside is input, and the M2 board power supply starts to operate. When the M2 board power supply operates and voltage is output, part of it if fed to pin ③ on the C1 board on the M1 board. This serves as the ON signal and the M1 power supply starts to operate.

3-12-1. C2 BOARD(CONTROL BOARD)

Pins ① and ② of IC51 make up an error amp for controlling the output voltage. The 5.7V output is divided across R71, R270, and RV251 and input to pin ①. The 5V voltage fed from pin ⑭ is divided between R62 and R63 and input to pin ② as the standard voltage. Pin ④ controls the dead time. When the signal at this pin is high, the on duty signal is 0.

When the ON signal is low (the ON signal is input through Q251 and Q258), the signal at pin ④ goes high, so the power supply does not operate. The oscillation frequency is determined by pins ⑤ and ⑥. Pins ⑧, ⑨, ⑩ and ⑪ are the IC51 output transistor pins. They drive the main transistors through T153 and T154. Pin ⑫ is an input pin. Pin ⑭ is the standard voltage (5V) output pin. Pins ⑮ and ⑯ make up the error amp for protection against overcurrent. The voltage detected by T152 is rectified by D51, D52, D53, and S54, smoothed by L1 and C53, and input to pin ⑯.

3-12-2. M2 BOARD

C152, C153, C166, C167, Q151, Q152, and T151 make up the half bridge converter. The AC voltage output from T151 is rectified by D251, 252, 253, 254, 255, and 256 and smoothed by L251, 252, 253, 265, 266, 267, 268, and 270. D276, D277, D278, D279, R265, R266, R264, R263, and IC252 comprise the overcurrent protection circuit. When any of these output voltages exceeds the standard voltage, pin ① or pin ⑦ of IC252 goes high, the signal is input to pin ⑨ of IC2, D58 and Q53 come on, Pin ④ of IC5 goes high, and operation stops.

3-12-3. C1 BOARD (CONTROL BOARD)

The C1 board operates the same way as the C2 board.

3-12-4. M1 BOARD

C109, C110, C111, C112, Q101, Q102, Q103, and T101 comprise a half bridge converter. The AC voltage output from T101 is rectified by D201, 202, 203, 204, 205, and 206 and smoothed by C201, 202, 213, 214, 215, and 216. Q204, Q205, R232, R233, Q206, Q207, R234, R235, and R236 comprise an overcurrent protection circuit. For 10V output, when the divided voltage exceeds 5V, Q204 comes on, a high signal is input to pin ⑨ of the C1 board, D58 comes on and Q53 comes on, the signal at pin ④ of IC51 goes high, and operation stops. IC203, R247, R248, R249, R250, and R251 comprise a low-voltage protection circuit.

For 100V output, the voltage divided across R247 and R248 is input to pin ⑥ of IC203 and the standard voltage is formed at pin ⑤.

When the voltage at pin ⑥ drops below that at pin ⑤, a high signal is output from pin ⑦ and input to pin ③, time delayed by C227 and R241, and a high signal is output from pin ①. This signal passes through the M2 board and is transmitted to pin ⑨ of the C2 board, so operations stop. R201, IC201, R217, R218, and RV202 comprise a series regulator. R208, R209, R210, R212, R213, R214, R215, R254, and RV201 comprise an overcurrent protection circuit.

3-13. CIRCUIT BOARD PA AND CIRCUIT BOARD PB

3-13-1. HIGH-VOLTAGE GENERATOR

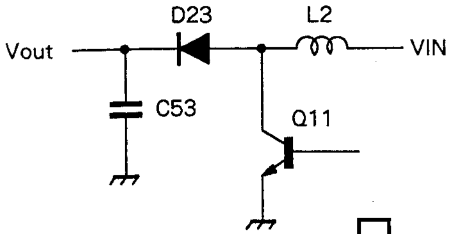
As this is a wide-range multiscan compatible unit, it is difficult to construct a high-voltage circuit by synchronizing with fH as in previous circuits. Therefore, an asynchronous type high-voltage generator having its own oscillator was devised.

The oscillating element X1 is the oscillator's basic clock and oscillates at approximately 500kHz. This clock is divided by IC7 and IC8, generating a 15.625kHz pulse as its internal oscillator (INT OSC). This pulse is output from pin ⑤ of IC8 and this INT OSC is used as a switching pulse between two circuits, one of which is sent through buffer Q3 and used in the high-voltage generator circuit. The other passes through buffer Q4 and connector PA-3 on PA board and becomes the switching pulse for the negative power supply for board E. The pulse passes through buffer Q3 and connector PA-7 on PA board and added to Q6, the transistor used to drive transformer Q6. The output of this drive transformer (T2) drives FBT's converter transistor (Q10). Q19 is the power current source for controlling the drive condition of converter transistor (Q10). By fixing its base and by adding the same voltage as +B of FBT to the emitter resister (R112), it modifies the energy of the primary side of the drive transformer in accordance with the HV load, enabling converter transistor (Q10) to be driven most efficiently. The basic section of the high-voltage circuit is the same as with previous circuits in which Q10 is the converter transistor ; D20 and D21, the damper diode ; C51, the common condenser ; L3 and L4, the dummy L ; and C54, an S-shaped condenser. To realize high output to FBTs are connected in parallel. From one of them (FBT 1) the MV for use as the focus voltage is extracted.

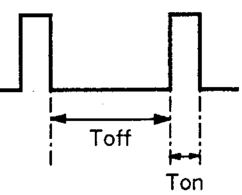
As this particular system uses an asynchronous high-voltage method, the high voltage's ripple content can easily affect the screen. For this reason, the high voltage generated by FBT is once passed through a filter (HVF) and then is added to HVB which distributes and detects high voltage. This is then supplied to each CRT.

3-13-2. HV REGULATOR

In a high − voltage regulation method, + B of FBT is controlled (FB pulse level controller) to maintain a constant high − voltage level. The + B that is being controlled is made by stepping up a + 100V by a switching regulator circuit. The degree of step up is determined by the duration of switching ON and OFF. When the ON duration is long, the degree of step up is greater and vice versa. The high voltage is reduced by a factor of approximately 4125 by HVB and the output passes through connector PA − 7 on PA board and goes into buffer IC1 (μ PC4082, 1/2). This buffer output is further divided by high − voltage adjustment resistors Δ R41 and Δ R42 and is input into the plus side (pin ①) of OP AMP's switching regulator IC6 (μ PC1394). The minus side (pin ⑭) is supplied with the voltage (approximately 3.0V) of IC9, the standard voltage source. It is through this difference in voltage that the ON − OFF duty of switching pulse (pin ⑦ output) is modified. The output of pin ⑦ passes through buffer Q20 and into the drive converter circuit Q5 and T1. There, the polarity of the pulses are reversed and the switching transistor Q11 driven. Q11 steps up the + 100V voltage by switching L2 and regulating with D23 and C53. If the high voltage rises and exceeds the voltage (pin ① of IC6) of the detector side, the ON interval of Q11 shortens and + B is lowered, causing the high voltage to fall. In case the high voltage level falls, a completely opposite operation takes place. As this goes to show, a negative feedback is applied so that the high − voltage detector voltage is always equal to the standard voltage (about 3.0V).



$$\text{Vout} = \frac{\text{Ton} + \text{Toff}}{\text{Toff}}\ \text{VIN}$$



3-13-3. HIGH VOLTAGE PROTECTOR

1) HV Protector

This is a protector to suppress any abnormal rise in HV due to some accident. The HV voltage is divided by the high voltage block (HVB) and by Δ R33, Δ R34 and is input into the plus side of 1/2 of IC2 (μ PC393C). A comparator voltage (approximately 4.8V) generated by zener (RD5.1ESB2) should be input into the minus side. The protector is activated when HV rises and the voltage on the plus side exceeds that of the minus side. It operates by first turning the 1/2 side of IC2 (μ PC 393C) ON and the 2/2 side OFF. The oscillation of the HV Regulator is stopped by D8 (ISS119) and Q7 is then turned ON. This causes the oscillation of the converter to be stopped. After dropping HV, D28, Q16 and Q15 are turned ON and the power turned OFF.

2) Σ IK Protector

This protector suppresses any abnormal beam to flow through the CRT. The current of FBT's secondary side is changed to a voltage by R44 to R47, R119, R120 and the protector is activated when this voltage exceeds a certain level. This detecting voltage is divided by R121 and R1 and is input into the base of Q1, which is usually set to the ON position. As the beam current gets larger, the detecting voltage lowers rapidly to the minus side until it reaches a point where Q1 is turned OFF and the protector is activated. The method of operation is the same as (1) HV Protector. The oscillation of the regulator is first stopped, the HV dropped, and finally the unit's power turned off. The unit consists of 2 channels of identical Σ IK Protectors.

3) Low B Protector

This protector is activated when IC5 (μ PC78M12H), an IC that generates Low B (+ 12V) inside board PA, is destroyed and as a result Low B (+ 12V) increases. A voltage generated by resistance dividing Low B (+ 12V) is input into the plus side of IC1 (μ PC4082C) 1/2 while a comparator voltage generated by zener (RD5.1ESB2) should be input into the minus side. The protector is activated when Low B rises and the voltage on the plus side increases.

4) Regulator Protector

This protector protects the element by turning off theoscillation of the regulator when the regulator's voltage becomes abnormally high such as when a high voltage load has been opened. The voltage at the regulator out is divided by R48 to R50, R14, R15 and is input into the plus side of IC3 (μ PC393C) 1/2. A comparator voltage should be input into the minus side. When the voltage at regulator out rises, this operational amplifier is enabled and the protector activated.

3-13-4. INTERNAL PROTECTOR

The circuit is designed so that when certain abnormal modes (for example, when deflection is disabled) are encountered the power is immediately cut off to avoid secondary disasters within the unit. Among the devices, H STOP (horizontal deflection disabled), V STOP (vertical deflection disabled), and FAN PROT (fan protector) all have their power – cut unit centralized on board PA. H STOP and V STOP send their output to the respective open collector and an OR operation is performed with D24 and D25. During abnormal conditions, Q16, Q15 turn ON and brings the "POWER CONT" line to low, thereby cutting off the power. Since the polarity of the "FAN PROT" signal is the opposite of H STOP and V STOP with normal ON generating output, the signal is reversed by Q17 and input into Q15.

3-14. CIRCUIT BOARD QHD

This board comprises input switching GBR/YPBPR switching, YPBPR signal processing, GBR aperture control and sync interface circuits. Here are exalanations of how these cirduits operate.

3-14-1. INPUT SWITCHING

The G/Y, B/PB, and R/PR video signals input to the A channel and the B channel are selected with the IC101, IC201, and IC301 Ach/Bch switches. The HD/C. Sync and VD synchronization signals are selected with the IC401 Ach/Bch switch.

3-14-2. YPBPR CONVERSION MATRIX CIRCUIT

The video signals that have passed through the Ach/Bch switch enter the GBR/YPBPR switch directly for BGR input or through the YPBPR processing circuit for YPBPR input. Here are the equations by which YPBPR signals are converted into GBR signals.

$$\begin{pmatrix} G \\ B \\ R \end{pmatrix} = \begin{pmatrix} 1 & -0.226 & -0.477 \\ 1 & 1.826 & 0 \\ 1 & 0 & 1.576 \end{pmatrix} \begin{pmatrix} Y \\ P_B \\ P_R \end{pmatrix}$$

Video signals are added to carry out conversion according to these equations. From the above equations,

$G - Y = -\ (0.226P_B + 0.4777P_R)$,

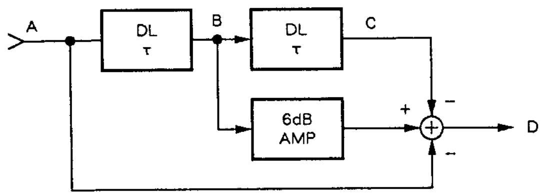
so first Q170 – 173 are an inversion addition circuit that add PB and PR and invert the result to create the G – Y signal. Q103 and Q104 add the Y signal to this G – Y signal to create the G signal.

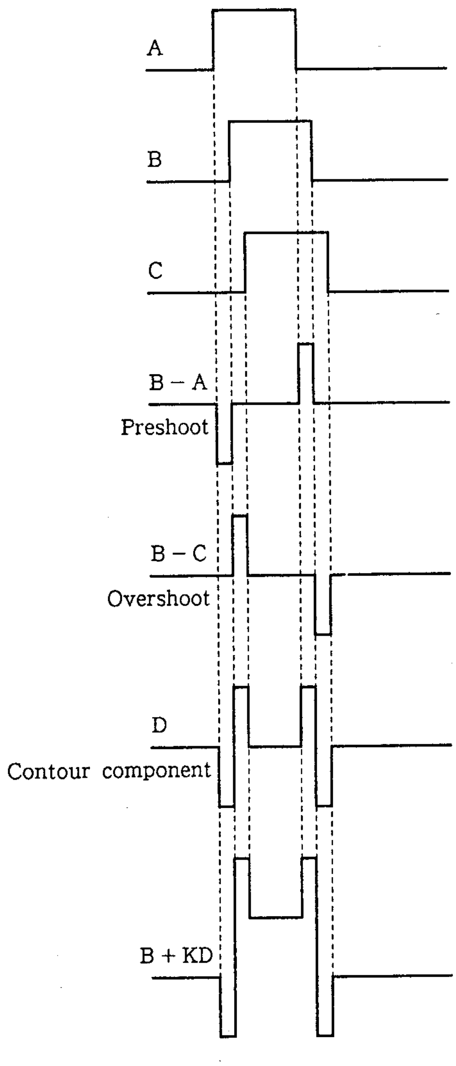
The B signal is made by adding Y and PB with Q203 and Q204 and the R signal is made by adding Y and PR with Q303 and Q304.

3-14-3. APERTURE CONTROL CIRCUIT

This circuit applies preshoot and overshoot to the contour to emphasize the contour. This is done by using delay lines and adding and subtracting the delayed signals to create the contour component and adding this to the signal. The figure below shows the basic principles. A is the original signal and B is the same signal delayed τ. C is B delayed a further τ. If the B signal is used as the standard, then the preshoot is made by subtraction A from B and the overshoot is made by subtracting C from B. Combining these two gives the contour component $2B - (A + C)$.

If the size of this contour component is controlled and added to the B signal, the signal has a correction contour. That is the basic idea for aperture control.





Let us find the frequency response of this aperture control circuit. Suppose a sine wave ($E\sin 2\pi ft$) is input.

$$D = -E\sin 2\pi ft + 2E\sin 2\pi f(t-\tau) - E\sin 2\pi f(t-2\tau)$$
$$= 2E(1-\cos 2\pi f\tau)\sin 2\pi f(t-\tau)$$

Thus, the output is a sine wave delayed τ compared to the input and with a gain of $2E\ (1-\cos 2\pi f\tau)$. Since the frequency with the maximum gain is :

$$\cos 2\pi f\tau = -1,$$

$$f = \frac{1}{2\tau}$$

Since a delay line with $\tau = 30$ ns is used, this aperture control circuit has a maximum frequency of 16.7 MHz.

The QHD board aperture control circuit corrects the contour for the G, B, and R signals. The Y signal is made from the RGB signals, the contour component is made for that Y signal, the gain of this contour component is controlled and it is added to the G, B, and R signals. By connecting the R, G, and B signals to the Q30 adder through a resistor matrix, the Y signal is produced with the formula :

$$Y = 0.701G + 0.087B + 0.212R$$

This Y signal passes through the Q31 and Q32 emitter − follower circuit and becomes the A signal discussed above. The signal passes through the Q33 emitter follower circuit, is delayed 30 ns by DL1, and passed through the Q34 and Q35 emitter follower circuit to become the B signal. Then this signal is delayed 30 ns by DL2 and passed through the Q36 emitter follower circuit to become the C signal. The A, B, and C signals are added and subtracted by Q37 and the result is output as the Q37 collector current. The gain of this current output is controlled by changing the voltage defference between the bases of Q38 and Q39 with control voltage (sharpness).

Then it is amplified by Q40, passes through the Q41 emitter follower circuit and is output. This output is added to the R, G, and B signals at amplifiers Q107, Q207, and Q307. In B & W mode, the B & W signals are also taken from the emitter of Q35 of this circuit, but since there is somewhat of a delay, the signals are delayed that amount by DL3 and input to COL/B & W switches IC103, IC203, and IC303.

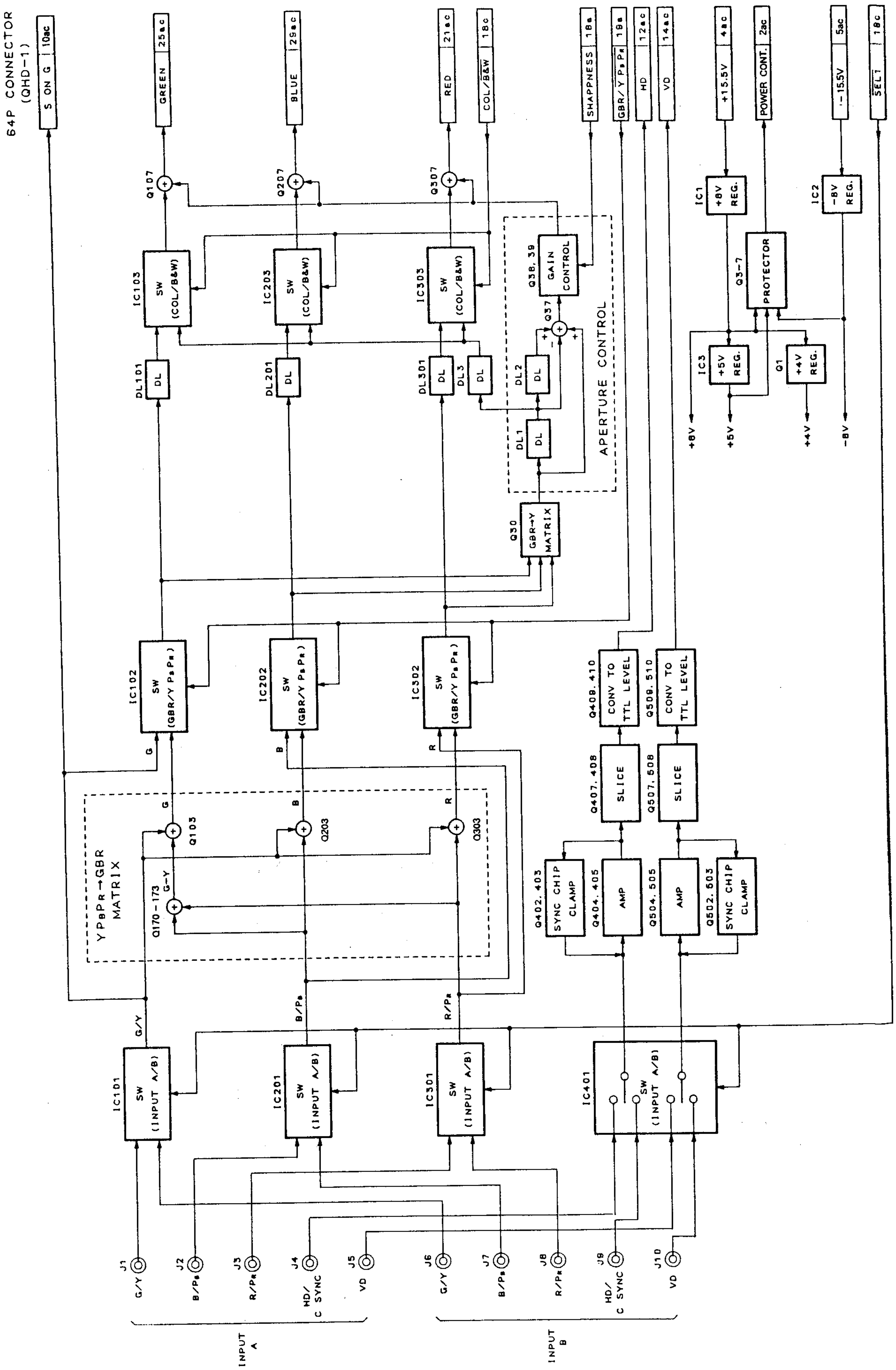
On the other hand, the G, B, and R signals pass through delay lines DL101, 201, and 301, which have the same delay as DL1 and DL3 combined and are input to the COL/B & W switch. The output from this switch and the gain controlled contour component discussed above are input to the emitters of Q107, Q207, and Q307, whose bases are grounded, where the sets of signals are mixed and amplified.

These mixed signals pass through the Q108, Q208, and Q308 emitter – follower circuits and through the Q109 and 110, Q209 and 210, and Q309 and 310 complementary circuits and are output.

3-14-4. SYNC INTERFACE CIRCUIT

The HD／C – Sync signal that has passed through the IC401 Ach／Bch switch passes through the Q401 emitter follower circuit and is amplified by Q404 and Q405. The bottom portion of this signal is clamped by the feedback clamp circuit comprising Q402 and Q403. The result is sliced with a voltage with a division ratio of (R411 + R412) ／ (R410 + R411 + R412) converted to 5 Vp – p TTL level by the Q409 amp, passed through the Q410 emitter – follower circuit, and output. The VD signal passes through the circuit comprising Q501 – 510 in the same manner and is output.

QHD Board Block Diagram



3-15. CIRCUIT BOARD Y

3-15-1. POWER SUPPLY BLOCK (PS1, PS2, D1, D2)

PS1 and PS2 serve as a power cutting fuse when a voltage overload occurs within board Y. In addition, D1 and D2 convert the voltage from +5.7V (−5.7V) to +5.0V (−5.0V). When pressing the main power switch of the set, SUB +5V is supplied, and when pressing the power switch of the connector, ±5.7V is supplied.

3-15-2. CPU BLOCK

1) CPU (IC1)
   A Z80 series 8−bit CPU with SIO, TIMER and other supporting ICs integrated into a single chip is used.
2) MEMORY (IC2, 3, 4)
   This is made up of programmable ROM (IC2), a general purpose S−RAM (IC3) for flag and data READ/WRITEs, and a non−volatile ROM (IC4) used to record adjustment data, etc.
3) BUS BUFFER (IC7, 8)
   A hysterisis − type current buffer is used for data transfers to systems external to the Y board (DB and L boards).
4) RS422 (IC24)
   An RS422 transmitter/receiver for communications with external computers, automatic adjustment devices, etc.
5) RESET Circuit (IC5, Q1, 2)
   A power − on reset circuit for the CPU and SIRCS DECODE IC. Q1 and 2 operate so that a normal reset occurs during instantaneous drop in power voltage caused by sudden black out, etc.

3-15-3. SIRCS BLOCK

1) SIRCS DECODER (IC9), WAIT CONTROL (IC6)
   This IC decodes SIRCS signals to enable the codes to be read by the CPU. The following processes take place from the time the SIRCS signals are received until the codes are read by the CPU :
   * The "CONT" terminal is set to Low when a valid SIRCS code is received.
   * A CPU interrupt occurs and the CPU turns the "CE/OE" signal of IC9 to Low.
   * IC6 (mono − multi) puts the CPU in WAIT state for a few msec.
   * Finally, the data are read into the CPU.
2) POWER CONTROL (Q3, 4, 5)
   When IC9 decodes a POWER ON (OFF) code, it unconditionally turns Q3 ON (OFF) and sends (cuts) the current supplied to the "power cont" line, thereby enabling control of the power supply. When the protector is activated, the power supply is cut by externally dropping the "power cont" line to GND. However, it should be noted that in such cases the operation of the protector is detected by Q4 and IC9 is reset by Q5.

3-15-4. I/O PORT BLOCK

1) ADDRESS DECODER, PARALLEL I/O PORT, INTERRUPT CONTROL (IC10, 28)
   IC10 is a dedicated gate array with the above functions and is a PORT that is used to READ ch − select and other control/input signal information. Additionally, it receives the control line for each protector and is also equipped with such functions as generating a CPU interrupt while it is in operation.
2) DIP SW (SW1, 2)
   SW1 is a special switch used for mode adjustments at the factory ; normally all bits (SW1 − 1 to 4) must be set to ON.
   When SW2 is pressed, all adjustment data defaults to the factory setting.

3-15-5. fH/fV DETECT BLOCK (IC12)

The present deflection frequency is detected from the VD/HFHD signals supplied by the deflection system and the information is sent to the CPU.

3-15-6. SYNC BLOCK

1) SYNC CONTROL & CLAMP PULSE GENERATOR (IC11)
   This is a gate array that generates SYNC pulses for the deflection system and clamp pulses for the signal system. It uses SYNC signals received from the Signal Board (H/C − sync, V − sync, Sync on Green) for its input. Itfeatures : * Detection of input SYNC signals (existence or non − existence of each SYNC and its polarity)
   * Selection of SYNC source (H/V − sync, Sync on Green or Composite − sync)
   * Alignment of SYNC polarity (Reversed when H/V − sync has a positive polarity)
   * H/V separation for Composite − sync and Sync on Green
   * Phase control of clamp pulses
   * Width control of clamp pulses
   * Transmission of various function control signals and information through the CPU BUS

2) H-SYNC REFORM (IC6)
Maintains the width of H-sync sent to the deflection system for approximately 2 μ sec.

3) V-SYNC DETECT (IC26)
Detects whether V-sync out pulse of IC11 exists or not and sends this information to the CPU. For example, this is done to determine if the signal connected to H/C-SYNC input terminal is composite or not.

3-15-7. CHARACTER GENERATOR/INTERNAL SIGNAL GENERATOR BLOCK

1) CHARACTER GEN. INT-SG (IC13, 14, 15, 16, 17)
Whenever an input exists, a clock synchronized to "HFHD" and "VD" are used to generate each test pattern and character. When input does not exist, the H and V-sync pulses, test patterns, and characters are created by a crystal-oscillated clock. (IC13)
IC14 is a high-speed S-RAM to record the position and color of the screen characters, while IC15 to 17 are mask ROMs to record character font data.

2) TTL to ECL CONVERTER (IC18, 19)
Because INT SG, character R/G/B, and BOARDER (shadow of characters) signals contain high-frequency contents, they are converted to ECL before being sent to the signal system board.

3) PLL (IC20, 21, 22, 23, 25, Q6)
Characters and internal signals are generated by synchronizing them with the incoming signals (HFHD and VD to be precise) with the use of a PLL circuit. The output from the phase comparator system (IC20) passes through an active filter composed of C44, R94, 95, and IC20 are then fed into a VCO (IC21). The output from VCO first goes into IC13 "CKIN" and then passes through a 1/417 pre-scaler equipped within IC13. Finally, the output is returned to the phase comparator. Since a single VCO imposes a limit on the frequency range that can be locked, 2 VCO units (IC21 is actually composed of 2 VCO units) are used: one for high-band use and the other for low-band use. The VCOs are switched by IC22's voltage converter and the flip-flop of IC23.
Furthermore, to improve the stability during locked conditions, Q6 and IC25 are used to control the polarity of the correcting waveform of IC20's pin ③.

4) VD SYNCHRONIZE (IC26, 27)
When VD and HFHD are in a certain phase relation, IC13's internal counter deviates by 1 count and may cause V-jitter of the characters. For this reason, the phase of VD is shifted to a stable position.

SECTION 4
SET-UP ADJUSTMENTS

Note for adjustments
For set-up adjustments, circuit adjustments, and CRT replacement, adjust with the direction yoke stuck attached the CRT.

ADJUSTMENTS WHEN REPLACING A CRT

4-1. NECK ASSEMBLY SETTING

※ After replacing the CRT, always position the neck assembly in the manner described below before carrying out any adjustments.

1. Attach the main deflection yoke, sub-deflection yoke, and magnet focus coil to the funnel section of the CRT.
2. Set the installation fixture for the 2-pole and 4-pole magnets in the center of G1 as shown in Fig. 2.

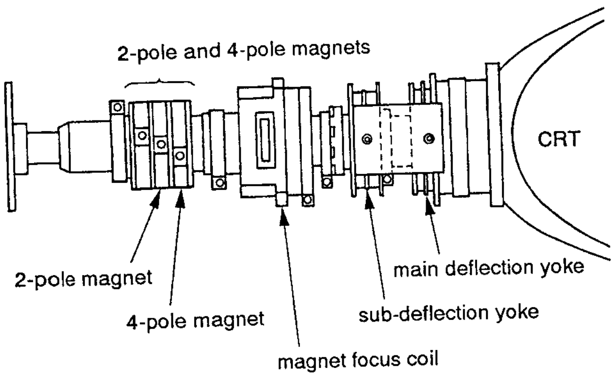
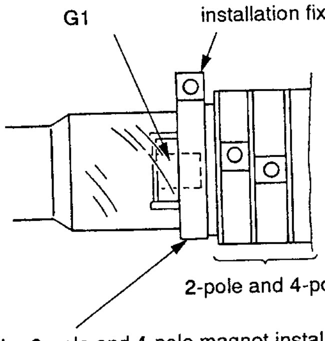


Fig. 1

※ Setting the 2-pole and 4-pole magnets.



Set so that the 2-pole and 4-pole magnet installation fixture comes to the center of G1.
Note: Be careful when installing the installation fixture. If it is tightened too much, it will break the neck section. (Only tighten to the point where the fixture starts to be deformed.

Fig. 2

4-2. MAIN DEFLECTION YOKE ADJUSTMENT

※ Carry out the main deflection yoke adjustment in the order green, red, blue.

1. After turning off the switch on Y board (SW1-1), turn on MAIN POWER switch and POWER switch on the set.
2. Press the [SKEW] key to put the system into skew adjustment mode.

```
SKEW ADJ


H:128
V:128
```

Fig. 3

3. Adjust with the ([◀], [▶], [▲] and [▼]) arrow keys so that H=128 and V=128. (Fig. 3)
4. Press the [TEST] key to display the cross-hair pattern.
5. Turn the main deflection yoke to adjust the screen tilt. (Fig. 4)

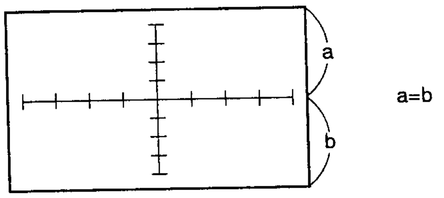


Fig. 4

6. After adjustment, fasten the main deflection yoke.
7. After all the adjustments have done, turn off POWER switch on the remote commander and off MAIN POWER switch.
   Turn on the switch on Y board (SW1-1) after confirming STAND-BY indicator goes off.

4-3. SUB-DEFLECTION YOKE ADJUSTMENT

※ Carry out the sub-deflection yoke adjustment in the order green, red, blue.

1. Press the remote commander REGISTRATION [LIN] key, then press the [TEST] key to display the cross-hair pattern.
2. Adjust the sub-deflection yoke so that when the ([◀] and [▶]) arrow keys are varied from their maximum to their minimum settings, the center horizontal line is not distorted. (Fig. 5)

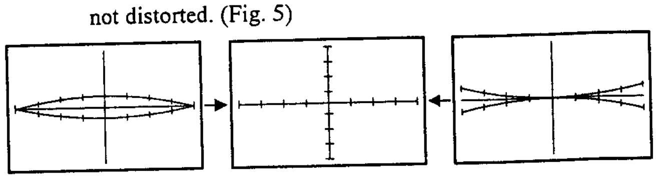


Fig. 5

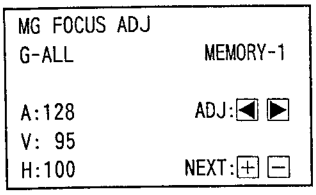
Note: If the sub-deflection yoke is not completely adjusted, the type of distortion shown in the figure above will be seen when the H: data is greatly changed.

3. After adjustment, fasten the sub-deflectin yoke.

4-4. MAGNET FOCUS COIL ADJUSTMENT

※ Carry out the magnet focus coil adjustment in the order green, red, blue.

1. Press the remote commander FOCUS [MG] key to put the system into magnet focus adjustment mode.
2. Select the color to be adjusted with the ADJ [R], [G], and [B] keys.



Green signal color

Fig. 6

3. Use the (◀ and ▶) arrow keys to set the A: data to 128. (Fig. 6)
   A: The adjusted data of the center focus.
   V: The adjusted data of the upper and the bottom focus.
   H: The adjust data of the right and left focus.
4. Move the magnet focus coil forward and back to adjust the focus at the center of the screen. (Fig. 7)

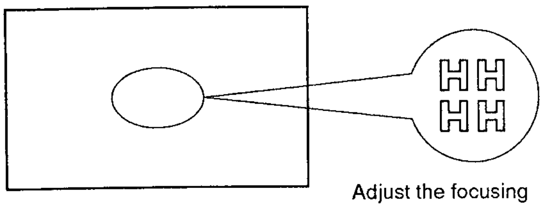


Fig. 7

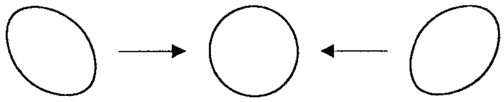
Adjust the focusing at H-pattern.

5. After adjustment, fasten the magnet focus coil.

4-5. 2-POLE AND 4-POLE MAGNET ADJUSTMENT

※ Carry out the 2-pole and 4-pole magnet adjustment in the order green, red, blue.

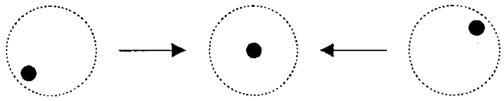
1. Double check that the installation fixture for the 2-pole and 4-pole magnets is at the center of G1, then fasten it.
2. Press the INPUT SELECT [VIDEO] key, then press the PICTURE CONTROL [RESET] key.
3. Adjust the contrast to maximum with the CONTR +/ − keys.
4. Press the remote commander FOCUS [MG] key, then press the [TEST] key and select the dot pattern.
5. Press the (◀) arrow key and adjust to made the dot shape easy to see (defocus).
6. Adjust the 4-pole magnet to make the dots perfectly circular. (Fig. 8)
7. Press the (▶) arrow key and adjust to make the core of the dot easy to see (under focus).
8. Adjust the 2-pole magnet so that the core of the dot is at the center of the halation. (Fig. 9)
9. Repeat 5) − 8) and adjust while securing the tracking.
   - 4-pole magnet adjustment



Adjust to make the dot perfectly circular.

Fig. 8

- 2-pole magnet adjustment



Adjust so that the dot core is at the center.

Fig. 9

10. Press the (◀ and ▶) arrow keys to focus the center of the screen.
11. After adjustment, fasten the 2-pole and 4-pole magnets.

4-6. GREEN FOCUS ADJUSTMENT

1. Press the remote commander FOCUS [LENS] key to put the system into lens focus adjustment mode.
2. Press the ADJ [G] key to select green.

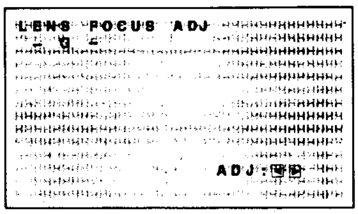


Fig. 10

3. Press the (◀ and ▶) arrow keys to focus the center of the screen.
4. Press the remote commander FOCUS [MG] key to put the system into magnet focus adjustment mode.
5. Press the PICTURE CONTROL [RESET] key, then set the following data with the CONTR +/ − and BRT +/ − keys.
   - CONTR: 80
   - BRT: 50

6. Press the INPUT SELECT [A] key.

```
MG FOCUS ADJ
G-ALL              MEORY-1

A:128              ADJ:◀ ▶
V: 95
H:100              NEXT:+ −
```

A: The adjusted data of the center focus.
V: The adjusted data of the upper and the bottom focus.
H: The adjusted data of the right and left focus.

Fig. 11

7. Press the (◀ and ▶) arrow keys to focus the center of the screen.
8. Press the POSITION + key to put the system into upper and bottom focus adjustment mode. (V:)
9. Press the (◀ and ▶) arrow keys to focus the screen upper and bottom.
10. Press the POSITION + key to put the system into right and left focus adjustment mode.
11. Press the (◀ and ▶) arrow keys to focus the screen right and left.
12. Press the [TEST] key and hold it for at least 5 seconds to select the HD monoscope pattern.
13. Press the (◀ and ▶) arrow keys to focus the HD monoscope pattern.

4-7. RED FOCUS ADJUSTMENT

1. Press the ADJ [R] key to select red.
2. Adjust the red focus with the procedure given in 3 – 13 for the green focus adjustment.

4-8. BLUE FOCUS ADJUSTMENT

1. Press the ADJ [B] key to select blue.
2. Adjust the blue focus with the procedure given in 3 – 13 for the green focus adjustment.
3. When the green, red, and blue focus adjustments are complete, press the [MEMORY] key. (Just press it; do not hold it down.)

4-9. CENTERING ADJUSTMENT

1. Press the remote commander CENT [R] key to put the system into red centering adjustment mode.
2. Press the CUT OFF [B] key to cut off the blue.
3. Press the (◀, ▶, ▲, and ▼) arrow keys to adjust the red line to overlay the center of the green.

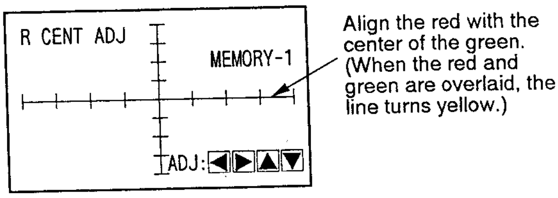


Fig. 12

4. Press the remote commander CENT [B] key to put the system into blue centering adjustment mode.
5. Press the CUT OFF [G] key to cut off the green.
6. Press the (◀, ▶, ▲, and ▼) arrow keys to adjust the blue line to overlay the center of the red.
7. If you can not adequately adjust the centering, put the system into zone adjustment mode and select Zone ① with the POSITION key.

4-10. GREEN PICTURE ADJUSTMENT

1. Size adjustment
   1) Press the remote commander [SIZE] key to put the system into size adjustment mode.
   2) Press the [TEST] key to select the cross-hair pattern, then press the ADJ [G] key.
   3) Press the CUT OFF [R] and [B] keys to select just green.
   4) Press the (◀, ▶, ▲, and ▼) arrow keys to adjust the picture size.

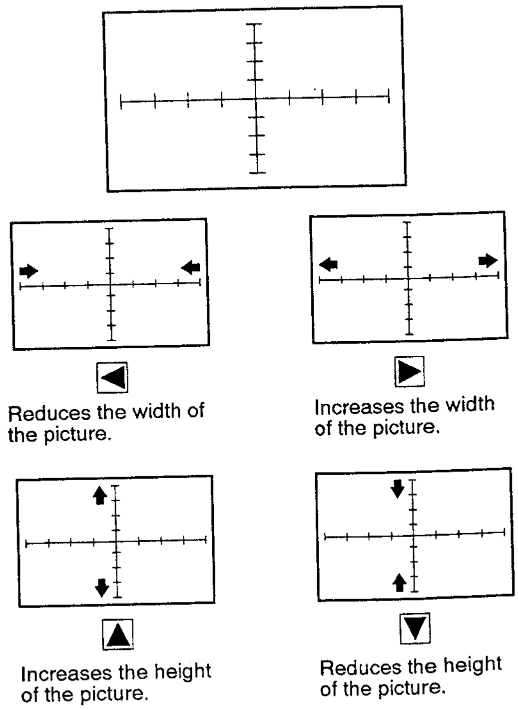


Fig. 13

2. Linearity (LIN) adjustment
   1) Press the remote commander REGISTRATION [LIN] key to put the system into linearity adjustment mode.
   2) Press the [TEST] key to select the cross-hair pattern, then press the ADJ [G] key.
   3) Press the CUT OFF [R] and [B] keys to select just green.
   4) Press the ([◀], [▶], [▲], and [▼]) arrow keys to adjust the left-right and upper-bottom center lines horizontally and vertically, respectively.

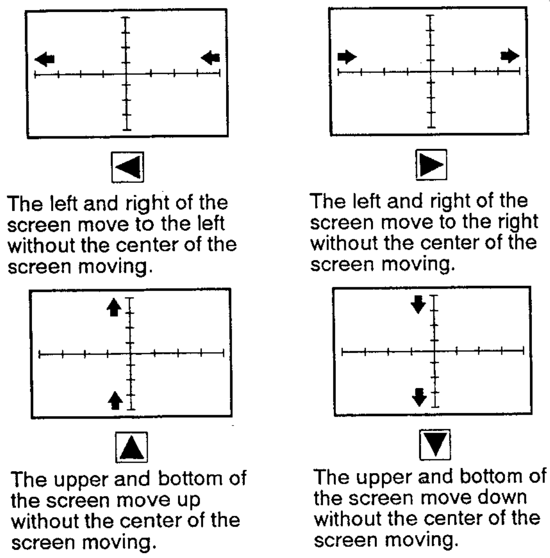


Fig. 14

3. Skew adjustment
   1) Press the remote commander REGISTRATION [SKEW] key to put the system into skew adjustment mode.
   2) Press the [TEST] key to select the cross-hair pattern, then press the ADJ [G] key.
   3) Press the CUT OFF [R] and [B] keys to select just green.
   4) Press the ([◀], [▶], [▲], and [▼]) arrow keys to adjust the left-right and upper-bottom center lines to be horizontal and vertical, respectively.

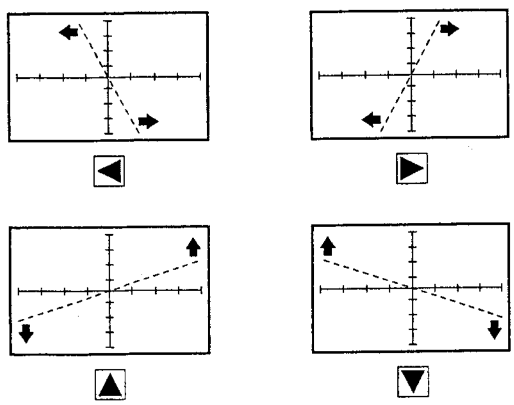


Fig. 15

4. Bow adjustment
   1) Press the remote commander REGISTRATION [BOW] key to put the system into bow adjustment mode.
   2) Press the [TEST] key to select the cross-hair pattern, then press the ADJ [G] key.
   3) Press the CUT OFF [R] and [B] keys to select just green.
   4) Press the ([◀], [▶], [▲], and [▼]) arrow keys to adjust the bow distortion of the cross lines.

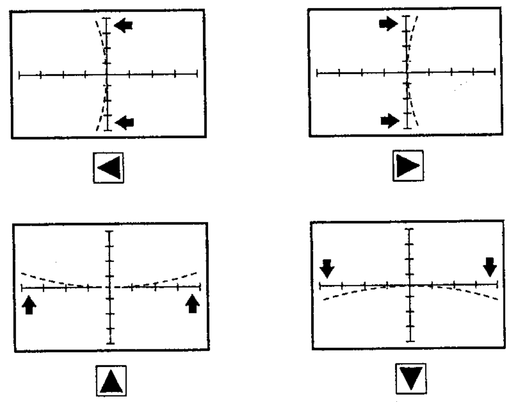


Fig. 16

5. Keystone adjustment
   1) Press the remote commander REGISTRATION [KEY] key to put the system into keystone adjustment mode.
   2) Press the [TEST] key to select the cross-hatch pattern, then press the ADJ [G] key.
   3) Press the CUT OFF [R] and [B] keys to select just green.
   4) Press the ([◀], [▶], [▲], and [▼]) arrow keys to adjust the keystone distortion of the four corners in the horizontal and vertical directions.

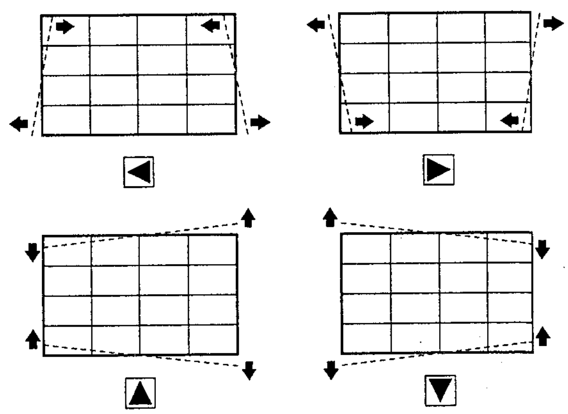


Fig. 17

6. Pincushion (PIN) adjustment
   1) Press athe remote commander REGISTRATION [PIN] key to put the system into pincushion adjustment mode.

2) Press the [TEST] key to select the cross-hatch pattern, then press the ADJ [G] key.
3) Press the CUT OFF [R] and [B] keys to select just green.
4) Press the ([◀], [▶], [▲], and [▼]) arrow keys to adjust the pincushion distortion for the upper, bottom, left, and right sides.

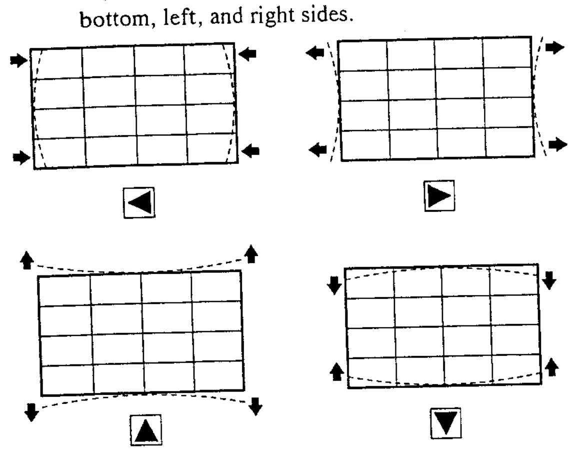


Fig. 18

4-11. RED-GREEN REGISTRATION ADJUSTMENT

1. Size adjustment
   1) Press the remote commander REGISTRATION [SIZE] key to put the system into size adjustment mode.
   2) Press the [TEST] key to select the cross-hair pattern, then press the ADJ [R] key.
   3) Press the CUT OFF [B] key to select just red and green.
   4) Adjust the horizontal size with HWC (LV3) on the E board. When the deflection yoke is replaced, set the RGB SIZE and REGISTRATION H. SIZE data to their maximums, before adjusting HWC.
   5) Press the ([▲] and [▼]) arrow keys to adjust the vertical size.

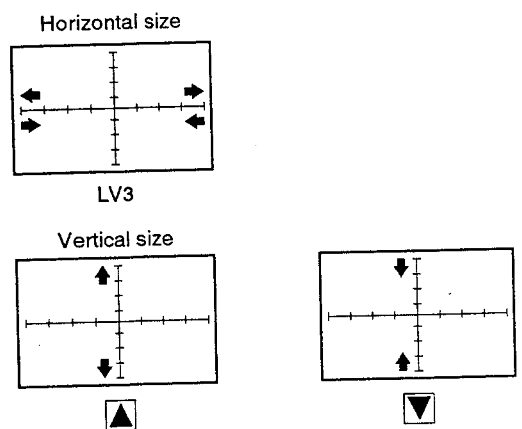


Fig. 19

2. Linearity (LIN) adjustment
   1) Press the remote commander REGISTRATION [LIN] key to put the system into linearity adjustment mode.
   2) Press the [TEST] key to select the cross-hair pattern, them press the ADJ [R] key.
   3) Press the CUT OFF [B] key to select just red and green.
   4) Press the ([◀], [▶], [▲], and [▼]) arrow keys to adjust the red linearity so that it overlays the green cross-hair.

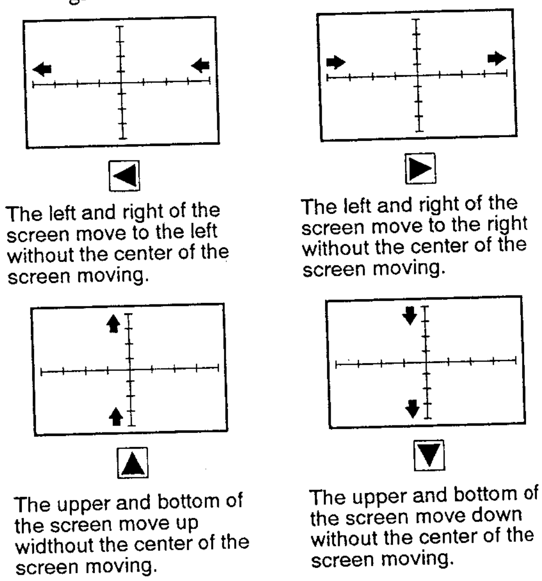


Fig. 20

3. Skew adjustment
   1) Press the [SKEW] key to put the system into skew adjustment mode.
   2) Press the [TEST] key to select the cross-hair pattern, then press the ADJ [R] key.
   3) Press the CUT OFF [B] key to select just red and green.
   4) Press the ([◀], [▶], [▲], and [▼]) arrow keys to adjust the red skew so that the red overlays the green cross-hair.

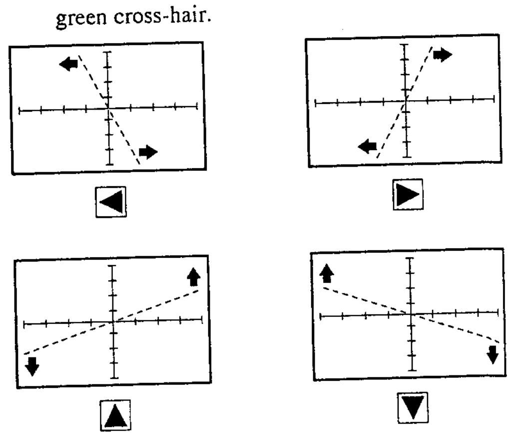
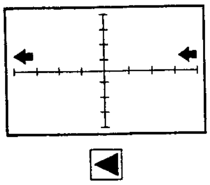
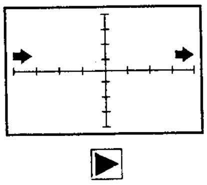


Fig. 21

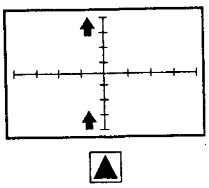
2. Linearity (LIN) adjustment
   1) Press the remote commander REGISTRATION [LIN] key to put the system into linearity adjustment mode.
   2) Press the [TEST] key to select the cross-hair pattern, then press the ADJ [G] key.
   3) Press the CUT OFF [R] and [B] keys to select just green.
   4) Press the ([◀], [▶], [▲], and [▼]) arrow keys to adjust the left-right and upper-bottom center lines horizontally and vertically, respectively.



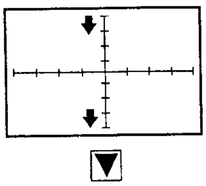
The left and right of the screen move to the left without the center of the screen moving.



The left and right of the screen move to the right without the center of the screen moving.



The upper and bottom of the screen move up without the center of the screen moving.



The upper and bottom of the screen move down without the center of the screen moving.

Fig. 14

3. Skew adjustment
   1) Press the remote commander REGISTRATION [SKEW] key to put the system into skew adjustment mode.
   2) Press the [TEST] key to select the cross-hair pattern, then press the ADJ [G] key.
   3) Press the CUT OFF [R] and [B] keys to select just green.
   4) Press the ([◀], [▶], [▲], and [▼]) arrow keys to adjust the left-right and upper-bottom center lines to be horizontal and vertical, respectively.

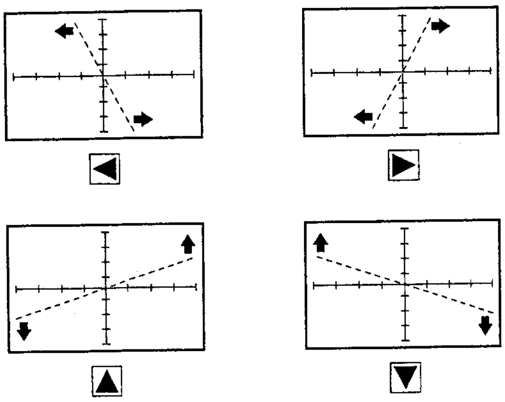


Fig. 15

4. Bow adjustment
   1) Press the remote commander REGISTRATION [BOW] key to put the system into bow adjustment mode.
   2) Press the [TEST] key to select the cross-hair pattern, then press the ADJ [G] key.
   3) Press the CUT OFF [R] and [B] keys to select just green.
   4) Press the ([◀], [▶], [▲], and [▼]) arrow keys to adjust the bow distortion of the cross lines.

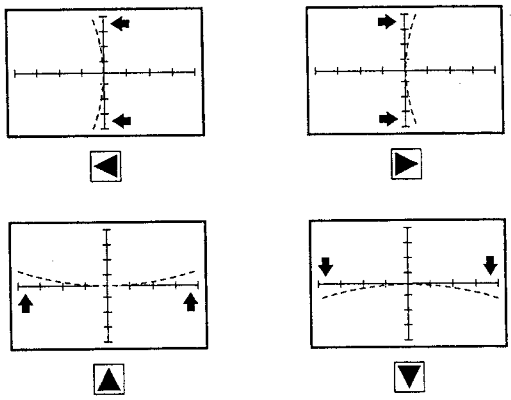


Fig. 16

5. Keystone adjustment
   1) Press the remote commander REGISTRATION [KEY] key to put the system into keystone adjustment mode.
   2) Press the [TEST] key to select the cross-hatch pattern, then press the ADJ [G] key.
   3) Press the CUT OFF [R] and [B] keys to select just green.
   4) Press the ([◀], [▶], [▲], and [▼]) arrow keys to adjust the keystone distortion of the four corners in the horizontal and vertical directions.

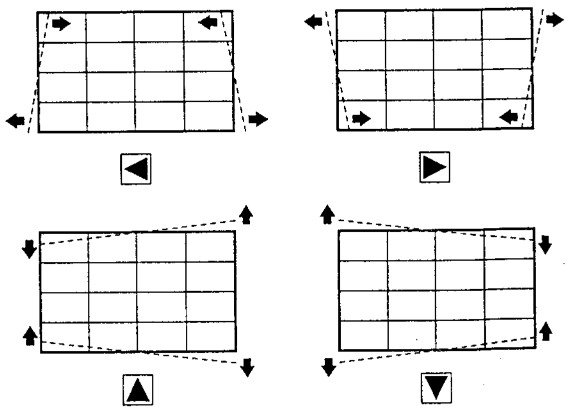


Fig. 17

6. Pincushion (PIN) adjustment
   1) Press athe remote commander REGISTRATION [PIN] key to put the system into pincushion adjustment mode.

2) Press the [TEST] key to select the cross-hatch pattern, then press the ADJ [G] key.
3) Press the CUT OFF [R] and [B] keys to select just green.
4) Press the (◀, ▶, ▲, and ▼) arrow keys to adjust the pincushion distortion for the upper, bottom, left, and right sides.

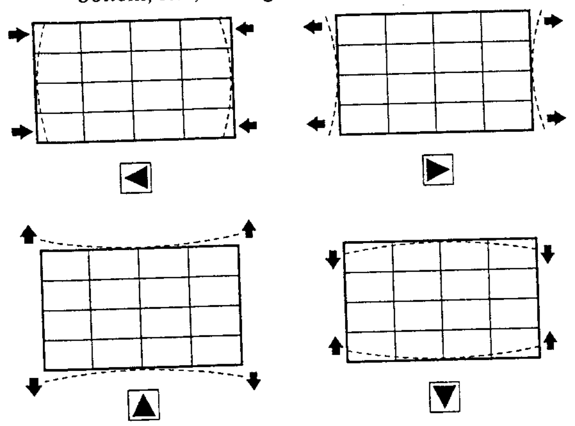


Fig. 18

4-11. RED-GREEN REGISTRATION ADJUSTMENT

1. Size adjustment
   1) Press the remote commander REGISTRATION [SIZE] key to put the system into size adjustment mode.
   2) Press the [TEST] key to select the cross-hair pattern, then press the ADJ [R] key.
   3) Press the CUT OFF [B] key to select just red and green.
   4) Adjust the horizontal size with HWC (LV3) on the E board. When the deflection yoke is replaced, set the RGB SIZE and REGISTRATION H. SIZE data to their maximums, before adjusting HWC.
   5) Press the (▲ and ▼) arrow keys to adjust the vertical size.

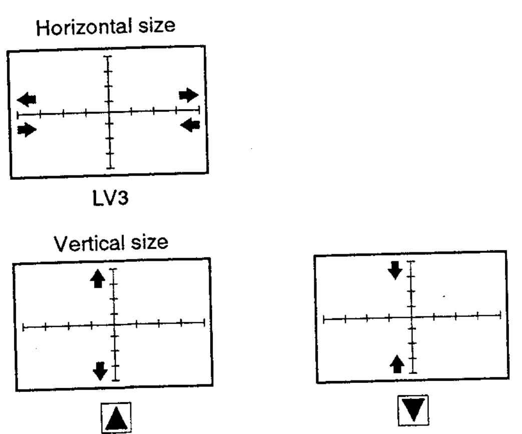


Fig. 19

2. Linearity (LIN) adjustment
   1) Press the remote commander REGISTRATION [LIN] key to put the system into linearity adjustment mode.
   2) Press the [TEST] key to select the cross-hair pattern, them press the ADJ [R] key.
   3) Press the CUT OFF [B] key to select just red and green.
   4) Press the (◀, ▶, ▲, and ▼) arrow keys to adjust the red linearity so that it overlays the green cross-hair.

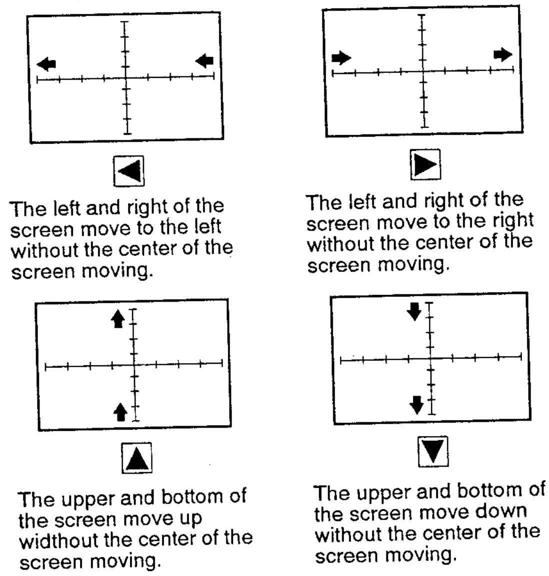


Fig. 20

3. Skew adjustment
   1) Press the [SKEW] key to put the system into skew adjustment mode.
   2) Press the [TEST] key to select the cross-hair pattern, then press the ADJ [R] key.
   3) Press the CUT OFF [B] key to select just red and green.
   4) Press the (◀, ▶, ▲, and ▼) arrow keys to adjust the red skew so that the red overlays the green cross-hair.

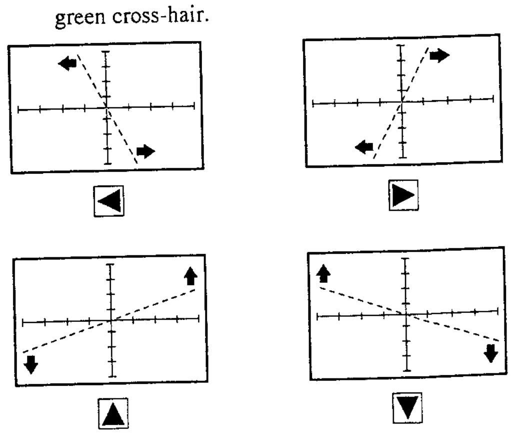


Fig. 21

 HDIH-1200M RM-1200

4. Bow adjustment
   1) Press the [BOW] key to put the system into bow adjustment mode.
   2) Press the [TEST] key to select the cross-hair pattern, then press the ADJ [R] key.
   3) Press the CUT OFF [B] key to select just red and green.
   4) Press the ([◀], [▶], [▲], and [▼]) arrow keys to adjust the red bowing so that the red overlays the green cross-hair.

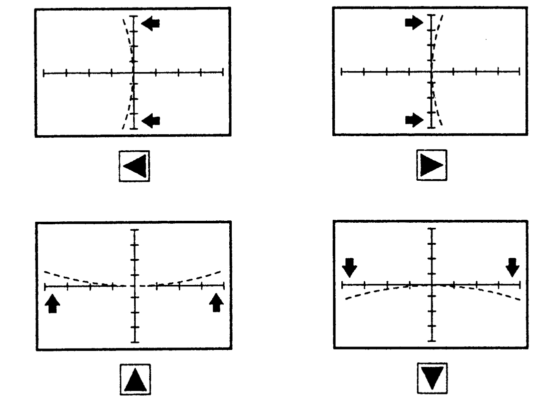


Fig. 22

5. Keystone (KEY) adjustment
   1) Press the [KEY] key to put the system into keystone adjustment mode.
   2) Press the [TEST] key to select the cross-hatch pattern, then press the ADJ [R] key.
   3) Press the CUT OFF [B] key to select just red and green.
   4) Press the ([◀], [▶], [▲], and [▼]) arrow keys to adjust the red keystone distortion so that the red overlays the green cross-hatch.

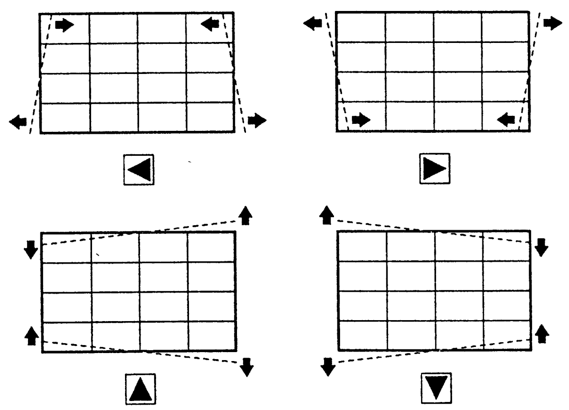


Fig. 23

6. Pincushion (PIN) adjustment
   1) Press the [PIN] key to put the system into pincushion adjustment mode.
   2) Press the [TEST] key to select the cross-hatch pattern, then press the ADJ [R] key.
   3) Press the CUT OFF [B] key to select just red and green.
   4) Press the ([◀], [▶], [▲], and [▼]) arrow keys to adjust the red pincushion distortion so that the red overlays the green cross-hatch.

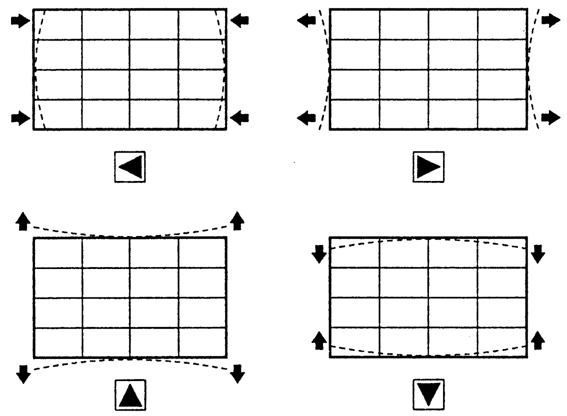
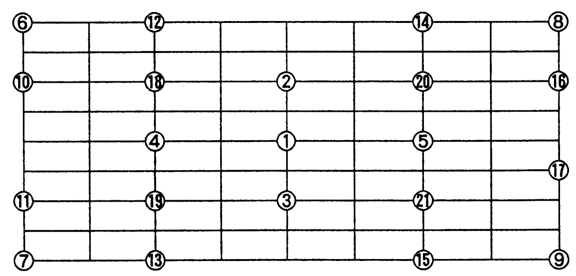


Fig. 24

7. Zone adjustment
   1) Press the [ZONE] key to put the system into zone adjustment mode.
   2) Press the [TEST] key to select the cross-hair pattern, then press the ADJ [R] key.
   3) Press the CUT OFF [B] key to select just red and green.
   4) Press the POSITION [+] key to put the system into Zone ④ adjustment mode. (Fig. 25)
   5) Press the ([◀], [▶], [▲], and [▼]) arrow keys to align the red and green horizontally ([◀] and [▶]) and vertically ([▲] and [▼]).
   6) In the same manner, adjust Zones ⑤ through ㉑ in order.



Note: Do not adjust Zones ② and ③.

Fig. 25

4-12. BLUE-RED REGISTRATION ADJUSTMENT

1. Size adjustment
   1) Just as in 1) – 3) for the size adjustment of the red-green registration adjustment, press the ADJ [B] key, then press the CUT OFF [G] key to select just blue and red.

   2) Adjust the horizontal size with HWC (LV1) on teh E board. When the deflection yoke is replaced, set the RGB SIZE and REGISTRATION H. SIZE data to their maximums, before adjusting HWC.
   3) Press the ([▲] and [▼]) arrow keys to adjust the vertical size.
2. Linearity (LIN) adjustment
   1) Just as in 1) – 3) for the linearity adjustment of the red-green registration adjustment, press the ADJ [B] key, then press the CUT OFF [G] key to select just blue and red.
   2) Press the ([◀], [▶], [▲], and [▼]) arrow keys to adjust the blue linearity so that the it overlays the red cross-hatch.
3. Skew adjustment
   1) Just as in 1) – 3) for the skew adjustment of the red-green registration adjustment, press the ADJ [B] key, then press the CUT OFF [G] key to select just blue and red.
   2) Press the ([◀], [▶], [▲], and [▼]) arrow keys to adjust the blue skew so that the blue overlays the red cross-hatch.
4. Bow adjustment
   1) Just as in 1) – 3) for the bow adjustment of the red-green registration adjustment, press the ADJ [B] key, then press the CUT OFF [G] key to select just blue and red.
   2) Press the ([◀], [▶], [▲], and [▼]) arrow keys to adjust the blue bowing so that the blue overlays the red cross-hatch.
5. Keystone adjustment
   1) Just as in 1) – 3) for the keystone adjustment of the red-green registration adjustment, press the ADJ [B] key, then press the CUT OFF [G] key to select just blue and red.
   2) Press the ([◀], [▶], [▲], and [▼]) arrow keys to adjust the blue keystone distortion so that the blue overlays the red cross-hatch.
6. Pincushion (PIN) adjustment
   1) Just as in 1) – 3) for the pincushion adjustment of the red-green registration adjustment, press the ADJ [B] key, then press the CUT OFF [G] key to select just blue and red.
   2) Press the ([◀], [▶], [▲], and [▼]) arrow keys to adjust the blue pincushion distortion so that the blue overlays the red cross-hatch.
7. Zone adjustment
   1) Just as in 1) – 3) for the zone adjustment of the red-green registration adjustment, press the ADJ [B] key, then press the CUT OFF [G] key to select just blue and red.
   2) Press the POSITION [+] key to put the system into Zone ④ adjustment mode. (See Fig. 25.)
   3) Press the ([◀], [▶], [▲], and [▼]) arrow keys to align the blue and red horizontally ([◀] and [▶]) and vertically ([▲] and [▼]).
   4) In the same manner, adjust Zones ⑤ through ㉑ in order.

4-13. WHITE BALANCE ADJUSTMENT

Preparations
   1. Remove the commander blinders.
   2. Press the [TEST] key and hold it for at least 5 seconds.
   3. The screen changes and the serviceman mode display appears.
   4. Press the [▲] arrow key.

   This puts the system into serviceman mode.

1. Blue defocus adjustment
   1) Press the FOCUS [MG] key to put the system into magnet focus adjustment mode.
   2) Press the ADJ [B] key.
   3) Press the [◀] arrow key to minimize the setting, then press the [▶] key to move in the direction of the point where the image is just focused and adjust for the point where the gaps between the horizontal lines and between the vertical lines can be seen (slightly defocused).

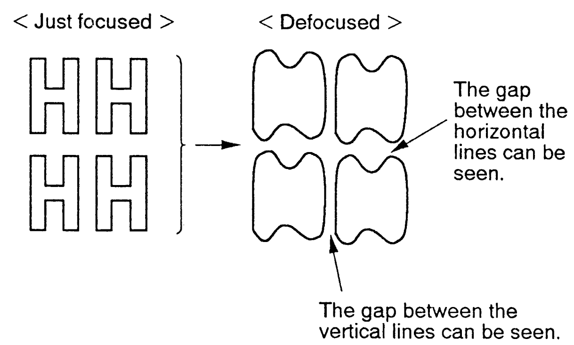


Fig. 26

   4) Press the [MEMORY] key.
2. G2 volume adjustment
   1) Short pines ① and ② on the CF2-3 connector of the CF-2 board. (Remove the L-6 connector from the L board and attach it to pins ① and ② of the CF2-3 connector to short them.)
   2) Input a high vision signal (Shibasoku TG91E6, etc.)
   3) Press the [TEST] key to set an all-white signal.
   4) Press teh [PAGE] key and select PAGE 4.
   5) Press the ([◀] and [▶]) arrow keys to select HDTV1.
   6) Press the ([▲] and [▼]) arrow keys to select input signal mode.
   7) Next, press the [◀] or [▶] key to select RGB or Y, PB, PR according to the input.

8) In the same way, use the (◀, ▶, ▲, and ▼) arrow keys to select COLOR SELECT: COL.
9) In the same way, use the (◀, ▶, ▲, and ▼) arrow keys to select SYNC SOURCE: INT or EXT.
10) Press the [MEMORY] key.
11) Press the [TEST] key and display the pluge signal on the screen.
12) In a dark room, turn the G2 control to adjust the red, green, and blue single-color brightnesses this way:
    - Adjust so that 0 IRE (background) is the same brightness as − 5 IRE and so +5 IRE glows slightly.

< Pluge signal >

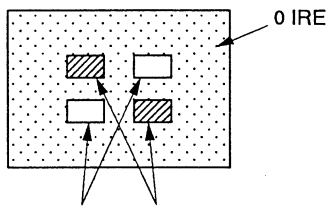


Fig. 27

13) Remove the short on the CF2-3 connector.

3. HDTV1 white balance adjustment (6500K)
   1) Press the W/B [GAIN] key.
   2) Press the [TEST] KEY and hold it for at least 5 seconds and output a 100 IRE all-white signal.
   3) Use a color meter (Minoluta CS-100 or the like). Press ADJ R/B and adjust so that
      x=0.313 ± 0.015
      y=0.329 ± 0.015
      ※ Do not press the ADJ [G] key.
   4) Press the [MEMORY] key.
4. HDTV2 white balance adjustment (9300K)
   1) Press the [PAGE] key and select PAGE4.
   2) Select HDTV2.
   3) Carry out Steps 1) and 2) of the procedure for HDTV1.
   4) Press ADJ R/B and adjust so that
      x=0.284 ± 0.015
      y=0.297 ± 0.025
   5) Press the [MEMORY] key.
5. VID1 white balance adjustment (6500K)
   1) Press the [PAGE] key and select PAGE4.
   2) Select VID1.
   3) Carry out steps 1) and 2) of the procedure for HDTV1.
   4) Press ADJ R/B and adjust so that
      x=0.313 ± 0.015
      y=0.329 ± 0.015
   5) Press the [MEMORY] key.
5. VID2 white balance adjustment (9300K)
   1) Press the [PAGE] key and select PAGE4.
   2) Select VID2.
   3) Carry out steps 1) and 2) of the procedure for HDTV1.
   4) Press ADJ R/B and adjust so that
      x=0.284 ± 0.015
      y=0.297 ± 0.025
   5) Press the [MEMORY] key.

MEMO

SECTION 5
SAFETY RELATED ADJUSTMENTS

When exchanging ◩ part check HV hold-down circuit, HV regulation circuit, LOW B protector circuit and beam current protector circuit.

⊠ R33, R34 [HV hold-down] PA board
◩ IC2, Q7, D9, D12, C13, R20, R21, R22, R23, R24, R32, R33, R34, R35, R36, R82, HV BLOCK, PA mount

⊠ R41, R42 [HV regulation] PA board
◩ IC1, IC6, IC7, IC8, IC9, D13, C16, R37, R38, R39, R40, R41, R42, R53, R55, R56, R58, R59, R129, X1, HV BLOCK, PA mount, PB mount

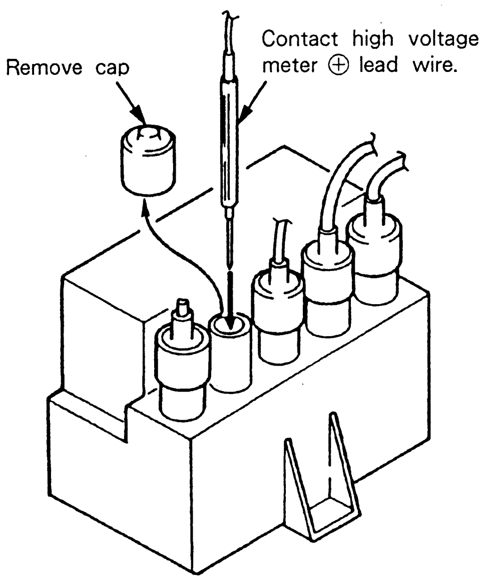
⊠ R29, R30 [LOW B protector] PA board
◩ IC1, IC3, IC5, Q8, D4, D5, D10, D11, R9, R10, R26, R28, R29, R30, R31, R88, R95, PA mount

⊠ R1, R4 [Beam current protector] PA board
◩ IC2, IC3, IC5, Q1, Q2, Q7, Q8, D4, D5, D9, R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R20, R21, R22, R23, R24, R43, R44, R45, R46, R47, R82, R88, R119, R120, R121, R122, R199 (DA board), PA mount, PB mount

⊠ R33, R34 : HV Hold-down

In case of using high voltage meter.

1. Confirm set power is turned OFF.
2. Connect high voltage meter ⊕ to HV filter vacant terminal and ⊖ to chassis earth.
3. Remove resistance mounted between PA board TP9 – TP11. Connect variable resistor and set at 47k Ω.
4. Remove resistance mounted between PA board TP12 – TP14. Connect variable resistor and set at 27k Ω.
5. Turn RV1 fully counterclockwise.
6. Turn set power ON.
7. Input monoscope signal, and set CONTR and BRT at maximum.
8. Turn variable resistor between TP12 – TP14 to change resistance value and adjust high voltage to around 34. 0 ± 0.3kV.
9. Turn variable resistor between TP9 – TP11 to change resistance value, adjust high voltage to around 34.0 ± 0.3kV, and confirm hold-down circuit operates and raster disappears.
10. Turn set power OFF.
11. Remove variable resistor between TP9 – TP11. Measure the variable resistor resistance value and solder on the same amount of resistance to R33, R34.
12. Next, slightly raise variable resistor resistance value between TP12 – TP14.
13. Turn set power ON.
14. Turn variable resistor between TP12 – TP14 again and raise high voltage. Confirm hold-down circuit operates at 34.0 ± 0.3kV and raster disappears.
15. Next, adjust HV regulation.



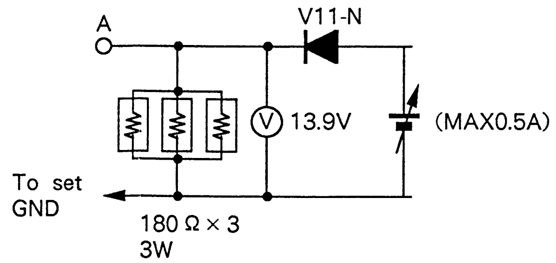
⊠ R41, R42 : HV regulation

In case of using high voltage meter.

1. Confirm set power is OFF.
2. Connect high voltage meter ⊕ to HV filter vacant terminal and ⊖ to chassis earth.
3. Set variable resistor between PA board TP12 – TP14 to 27k Ω.
4. Turn set power ON.
5. Press CUT – OFF key and cut – off R, G, B.
6. Turn variable resistor between TP12 – TP14 to change resistance value and adjust high voltage to around 33. 0 ± 0.3kV.
7. Turn set power OFF.
8. Remove variable resistor between TP12 – TP14. Measure the variable resistor resistance value and solder on the same amount of resistance to R41, R42.
9. Turn set power OFF.
10. Confirm high voltage meter reads 33.0 ± 0.3kV.
11. Turn set power OFF and remove high voltage meter.

⊠ R29, R30 : LOW B Protector

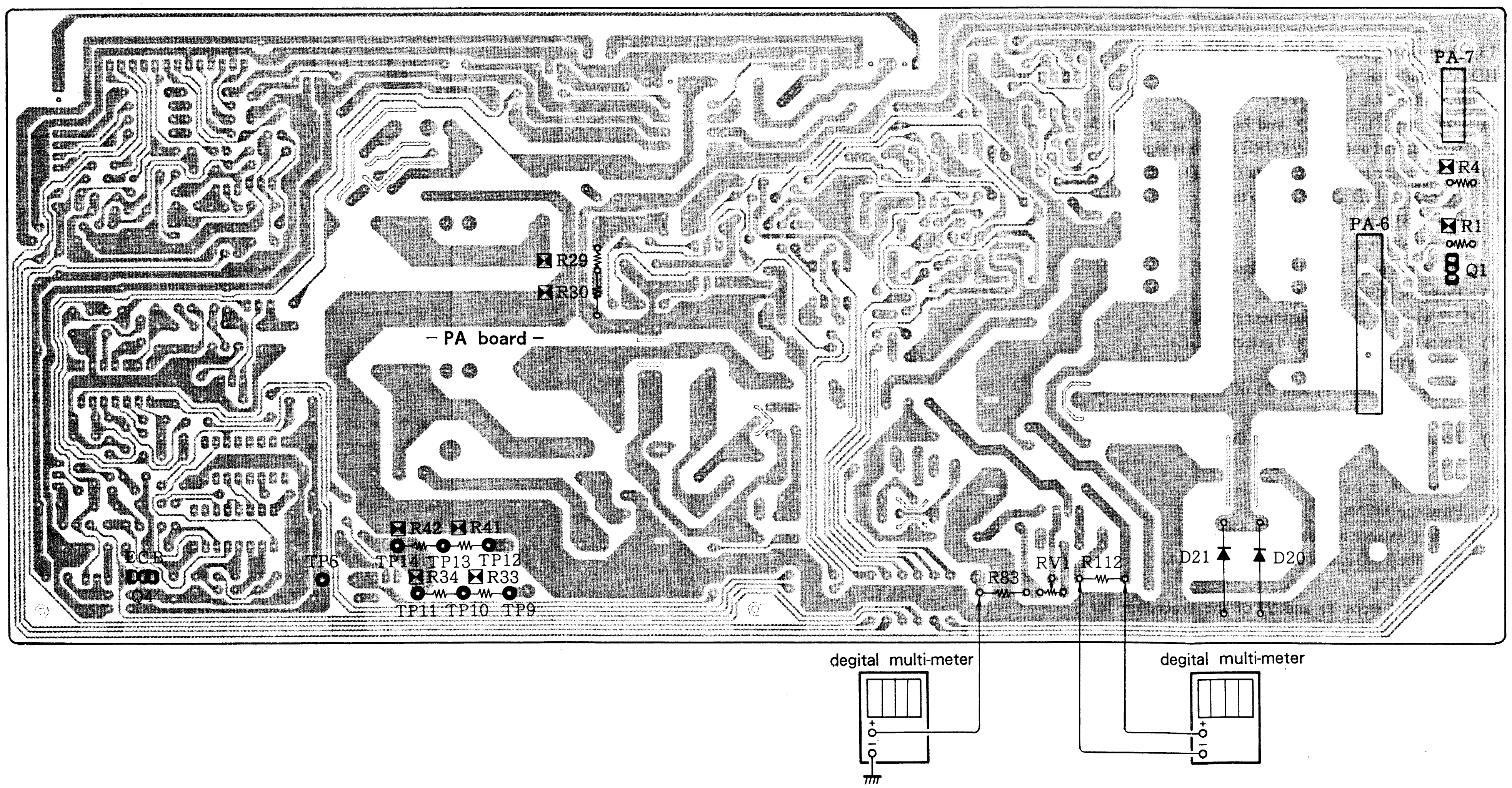
- Prepare jig circuit as shown in figure.
- Adjust until high voltage meter shows 13.9V.



1. Turn set power ON.
2. Contact jig circuit A point to PA board TP6 (12V line) for 0.5 – 1 sec, and remove immediately. Confirm power turns OFF when doing so.
3. If power does not turn OFF, adjust R29, R39.

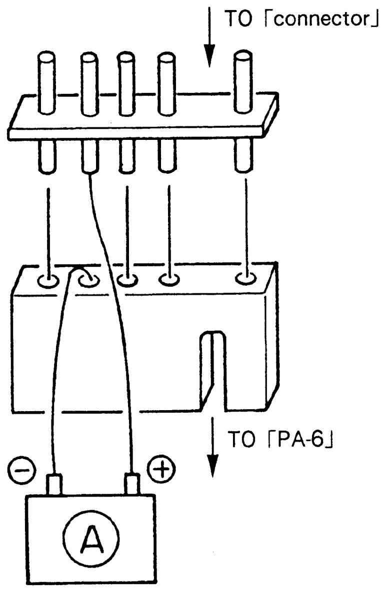
⊠ R1, R4

1. Confirn
2. Disconr shown
3. Short
4. Turn s
5. Input n BRT ai at und
6. If prot
7. Remov
8. Next, s
9. Turn s
10. Send t confirm disappe
11. When
12. .Remov



R1, R4 : Beam Current Protector

1. Confirm set power is turned OFF.
2. Disconnect PA board connector PA－6 and connect jig shown in figure.
3. Short circuit PA board Q1 emitter and collector.
4. Turn set power ON.
5. Input monoscope signal, send beam current by CONTR, BRT and G2VR, and confirm protector circuit operates at under 4700 μA and raster disappears.
6. If protector circuit does not operate, adjust R4.
7. Remove jig short－circuiting Q1 emitter and collector.
8. Next, short－circuit Q4 emitter and collector.
9. Turn set power ON.
10. Send beam current by CONTR, BRT and G2VR, and confirm protector operates at under 4700 μA and raster disappears.
11. When protector does not operate, adjust R1.
12. Remove jig short－circuiting Q4 emitter and collector.



To Check without Using High Voltage Meter

R33, R34 : HV Hold－down

1. Use voltage dividing network shown in figure to calibrate detection unit.

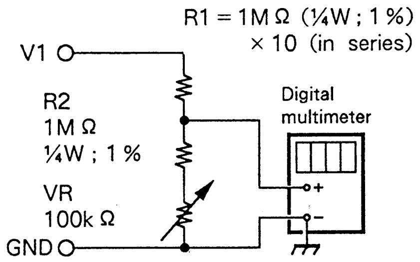
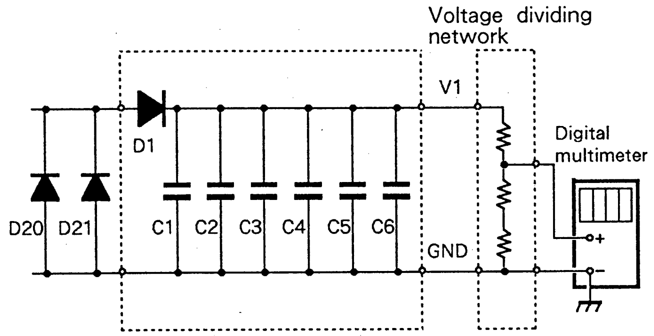


Fig. 1 : Voltage dividing network

2. Remove PA board connector (PA－7) to hold down high voltage. Connect V1 to 100V line of set and read V1 voltage with digital multimeter. Next, adjust variable resistor (VR) so that digital multimeter value is 1／10 of V1.
3. Connect pulse rectifier between PA board D20 or D21 anode and cathode.



Pulse rectifier D1～VII-N
C1～C6～20000P／1.6KV

4. Confirm set power is turned ON.
5. Confirm pulse rectifier and voltage dividing network are connected.
6. Remove resistance mounted between PA board TP9－TP11, connect variable resistor and set at 47kΩ.
7. Remove resistance mounted between TP12－TP14, connect variable resistor and set at 27kΩ.
8. Turn RV1 fully counterclockwise.
9. Turn set power ON.
10. Input monoscope signal, and set CONTR and BRT at maximum.
11. Turn variable resistor between TP12－TP14 and adjust until digital multimeter value is 96.5 ± 0.5VDC.
12. Turn variable resistor between TP9－TP11, and confirm hold－down circuit operates and raster disappears when digital multimeter is 96.5 ± 0.5VDC.
13. Turn set power OFF.

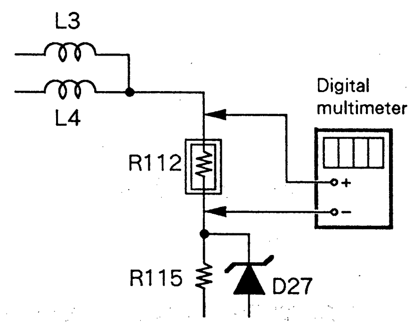
14. Remove variable resistor between TP9－TP11. Measure the variable resistor resistance value and solder on the same resistance variable resistor to R33, R34.
15. Slightly raise variable resistor resistance between TP12－TP14.
16. Turn set power ON.
17. Turn variable resistor between TP12－TP14 and confirm hold－down circuit operates and raster disappears when digital multimeter value is 96.5 ± 0.5VDC.
18. Next, adjust HV regulation.

R41, R42 : HV Regulation

1. Confirm set power is OFF.
2. Set variable resistor between PA board TP12－TP14 at 27kΩ.
3. Turn set power ON.
4. Press CUT－OFF key to cut－off R, G, B.
5. Turn variable resistor between TP12－TP14 and change resistance value. Confirm digital multimeter value is 83.5 ± 0.5VDC.
6. Turn set power OFF.
7. Remove TP12－TP14 variable resistor. Measure the variable resistor resistance value and solder on the same resistance variable resistor to R41, R42.
9. Turn set power ON.
10. Confirm digital multimeter value is 83.5 ± 0.5VDC.
11. Turn set power OFF and remove pulse rectifier.

HV Converter Drive Adjustment (RV1)

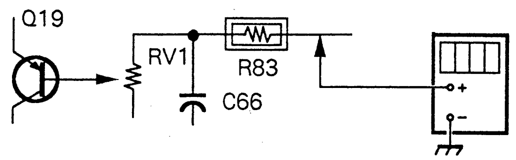
1. Connect digital multimeter on both ends of PA board R112.



2. Turn set power ON.
3. Press Commander CUT－OFF [R] [G] [B] and cut off R, G, B.
4. Adjust RV1 to 10.5 ± 0.5V.
5. Turn set power OFF.

Confirming ＋B MAX Voltage

1. Confirm set power is turned OFF.
2. Connect digital multimeter to PA board R83 and GND.



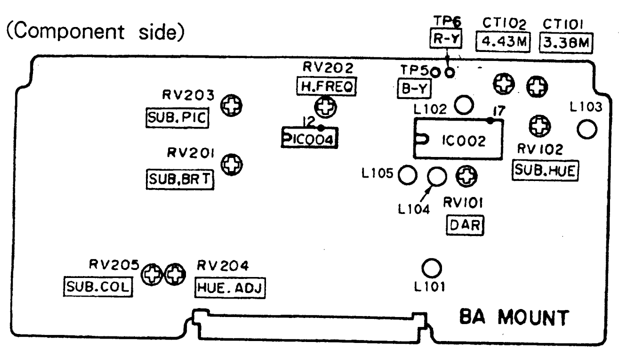
3. Input monoscope signal and turn set power ON.
4. Press CUT－OFF key and cut－off R, G, B.
5. Confirm 100 ± 1V.

Check after Exchanging Power Source Block

After exchanging power source block, check that ＋B MAX voltage is within the standard.

SECTION 6
CIRCUIT ADJUSTMENTS

6-1. BA BOARD ADJUSTMENT

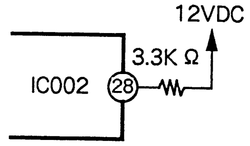


H. FREQ Adjustment (RV202)

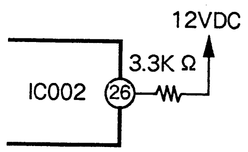
1. Ground IC004 pin ⑫.
2. Insert 10:1 probe in TP7 and connect frequency counter.
3. Adjust RV202 to 16,400 ± 50Hz.

REF. OSC Adjustment (CT101, CT102)

1. Input PAL color bar.
2. Connect 3.3K Ω to IC002 pin ㉘, apply 12VDC and set at PAL forced MODE.



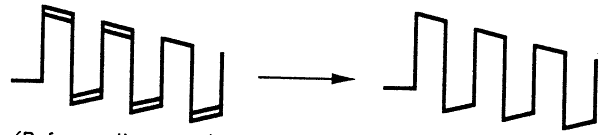
3. Ground IC002 pin ⑰ and turn color-killer OFF.
4. Adjust CT102 until screen movement slows.
5. Disconnect IC002 pin ⑰ grounding.
6. Input NTSC3.58 color bar.
7. Connect 3.3K Ω to IC002 pin ㉖, apply 12VDC and set at NTSC3.58 forced MODE.



8. Ground IC002 pin ⑰ and turn color-killer OFF.
9. Adjust CT101 until screen movement slows.
10. Disconnect 3.3K Ω connected to IC.

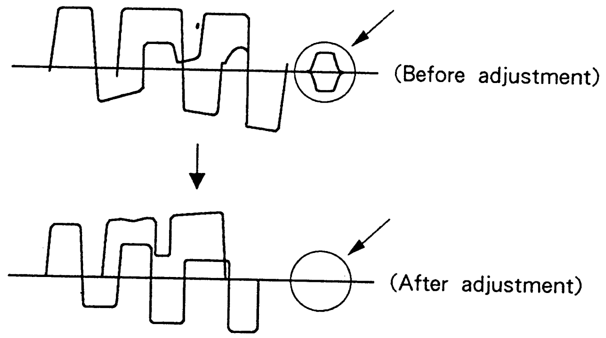
1H DELAY LINE Adjustment (L103, RV101)

1. Input PAL color bar.
2. Connect oscilloscope to TP-5 and view wave form in H block.



(Before adjustment) (After adjustment)

3. Adjust L103 and minimize double line part of wave.
4. Input PAL special color bar.
5. Adjust RV101 until wave ANTIPAL part is at 0-level.



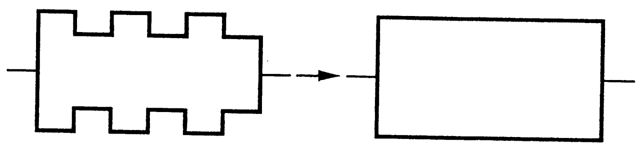
*RV101 and L103 influence each other. Repeat adjustment until both conditions are satisfied.

SECAM ID Adjustment (L102)

1. Input SECAM color bar.
2. Connect digital multimeter to TP4.(input impedance over 50M Ω)
3. Adjust L102 level to maximum.

BELL Filter Adjustment (L101)

1. Input SECAM color bar.
2. Connect oscilloscope to TP3 and view wave form of H block.
3. Adjust L101 until wave is flat.

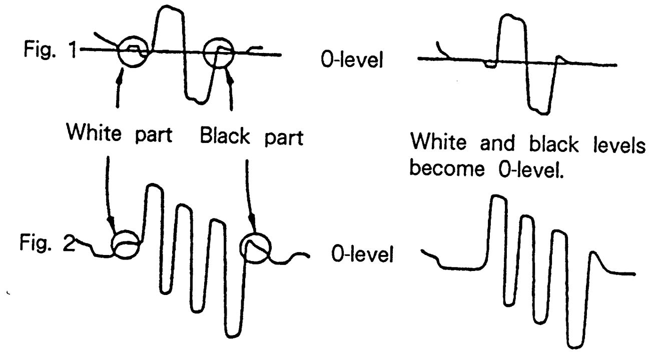


(Before adjustment) (After adjustment)

※ Tracking L101 and L102.

SECAM DISCRI Adjustment (L104, L105)

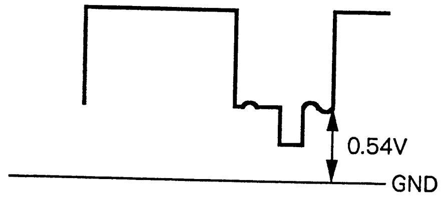
1. Input SECAM color bar.
2. Connect oscilloscope to TP6 and view wave form of H block.



3. Adjust L104 until white and black part of TP6 wave become 0-level.(Fig. 1)
4. Connect oscilloscope to TP5 and view wave form of H block.
5. Adjust L105 until white and black part of TP5 wave become 0-level (Fig. 2).

SUB BRIGHT Adjustment (RV201)

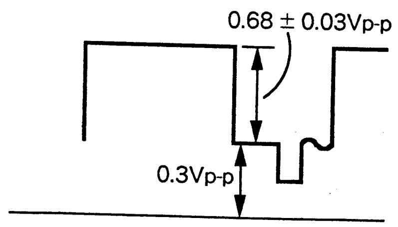
1. Input all white signal (100IRE).
2. Connect oscilloscope to BB board TP5 and view wave form of H block.



3. Adjust RV201 until pedestal level is 0.54V.

SUB PICTURE Adjustment (RV203)

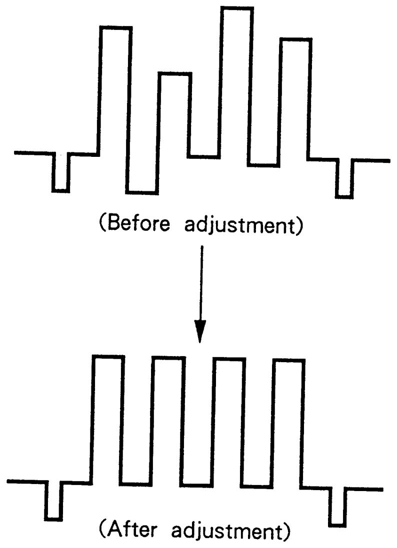
1. Input all white signal (100IRE).
2. Connect oscilloscope to BB board TP5 and view wave form of H block.



3. Adjust RV203 until pedestal to peak is 0.68 ± 0.03Vp-p.

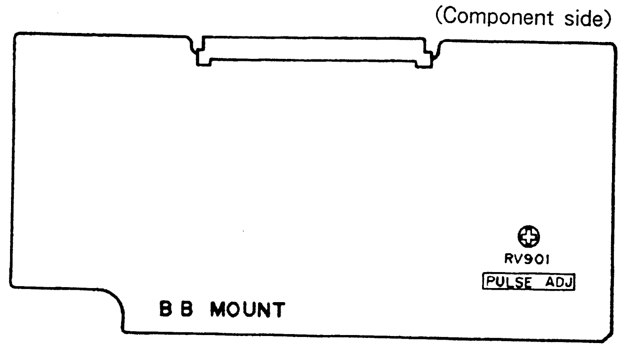
HUE, SUB COLOR, SUB HUE Adjustment (RV204, RV205, RV102)

1. Input PAL color bar signal.
2. Connect oscilloscope to TP10 and view wave form of H block.
3. Adjust RV204 (HUE) and RV205 (SUB COL) until wave is flat.



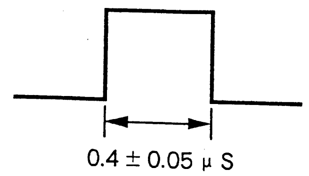
4. Input NTSC3.58 color bar.
5. Adjust RV102 (SUB HUE) until wave is flat.

6-2. BB BOARD ADJUSTMENT



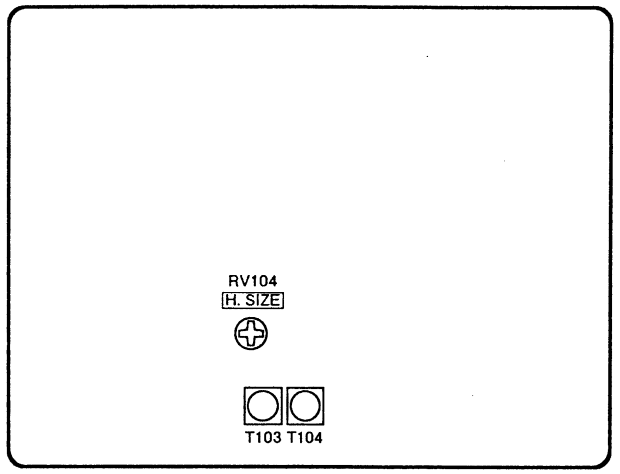
PULSE Adjustment (RV901)

1. Input color signal.
2. Connect oscilloscope to IC413 pin ⑥.
3. Adjust RV901 so that pulse width is 0.4 ± 0.05 μ S.



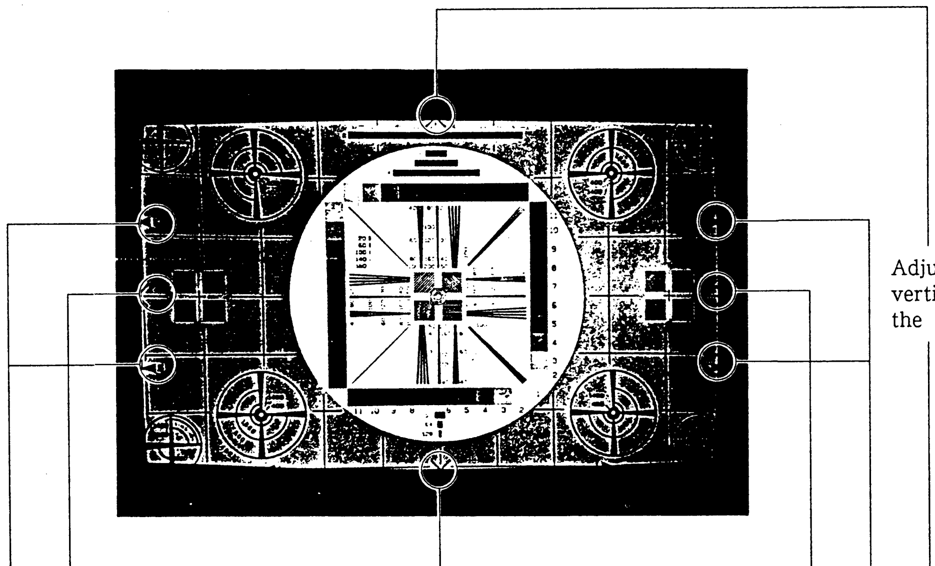
6 – 3. E BOARD ADJUSTMENT

(Component side)



H. SIZE Adjustment (RV104)

1. Input monoscope pattern signal using HDTV signal generator (Shibasoku TG91E6 etc).
2. With pressing RGB [SHIFT] key and next CUT OFF [R] and [B] keys on Remote Commander, the green HD monoscope pattern appears on the screen.
3. Adjust H center (marked "↑" and "↓" on the monoscope pattern) to the horizontal center of the screen using arrow keys [◀] and [▶]. (See Fig. A)
4. Adjust V center (marked "←" and "→" on the monoscope pattern) to the vertical center of the screen using arrow keys [▲] and [▼]. (See Fig. A)
5. Maximize H. SIZE with pressing RGB [SIZE] key and next arrow key [▶].
6. Adjust with RV104 (H. SIZE) so that "◀" (left side) and "▶" (right side) on the screen become to the edge of an effective screen.

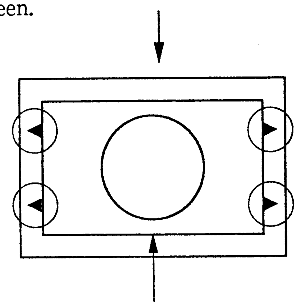


Adjust ↑, ↓ to the vertical center of the screen. (H center)

Fig. A

Adjust ←, → to the horizontal center of the screen. (V center)

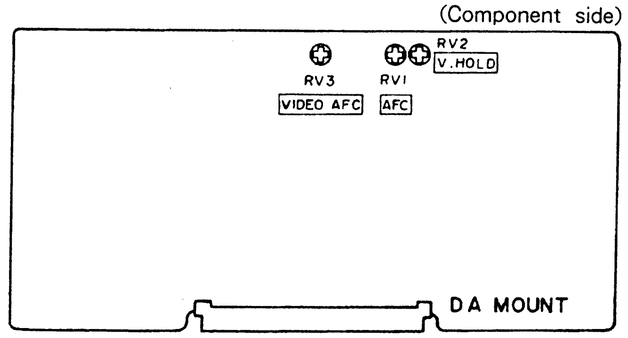
Adjust with RV104 so that ◀, ▶ become to the edge of an effective screen.



Edge of an effective screen.

6 – 4. DA BOARD ADJUSTMENT

(Component side)



AFC Adjustment (RV1)

1. Input HDTV signal using HDTV signal generator (Shibasoku TG91E6 etc.).
2. Turn RV1 full clockwise.
3. Press S1 (HD OFF) switch and set at picture free running state.
4. Turn RV1 counterclockwise a little at a time and stop picture.
5. Connect TP2 to frequency counter.
6. Read frequency counter indicated value while pressing S1 switch.
   The value is f1.
7. Turn RV1 full counterclockwise.
8. Press S1 switch and set at picture free running state.
9. Turn RV1 clockwise a little at a time and stop picture.
10. Read frequency counter indicated value while pressing S1 switch.
    The value is f2.
11. Adjust $\frac{f1+f2}{2}$ ± 200Hz value with RV1.

Video AFC Adjustment (RV3)

1. Input video signal.(fH = 15.75kHz, FV = 60Hz)
2. Turn RV3 (video AFC) full clockwise.
3. Press S1 (HD OFF) switch and set at picture free running state.
4. Turn RV3 counterclockwise a little at a time and stop picture.
5. Connect frequency counter to TP2.
6. Read frequency counter indicated value while pressing S1 switch.
   The value is f1.
7. Turn RV3 full counterclockwise.
8. Press S1 and set at picture free running state.
9. Turn RV3 clockwise a little at a time and stop picture.
10. Read frequency counter indicated value while pressing S1.
    The value is f2.
11. Adjust to $\frac{f1+f2}{2}$ ± 200Hz with RV3.

V HOLD Adjustment (RV2)

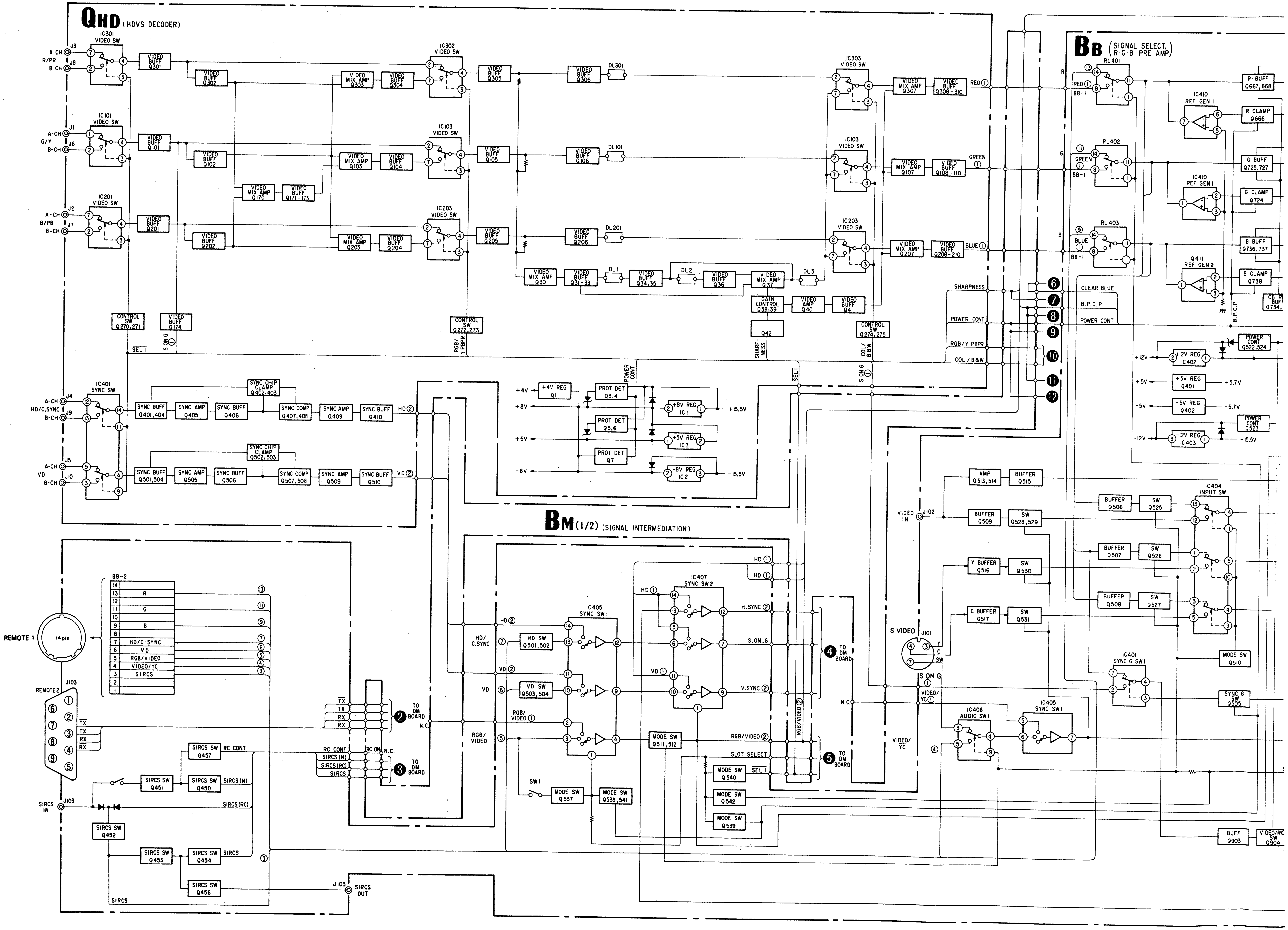
1. Set at No – signal state.
2. Press S2 (V SYNC OFF).
3. Press remote commander [PAGE] key and display PAGE 5.
4. Adjust until screen display fV is 28.0 ± 2Hz with RV2 (V HOLD).

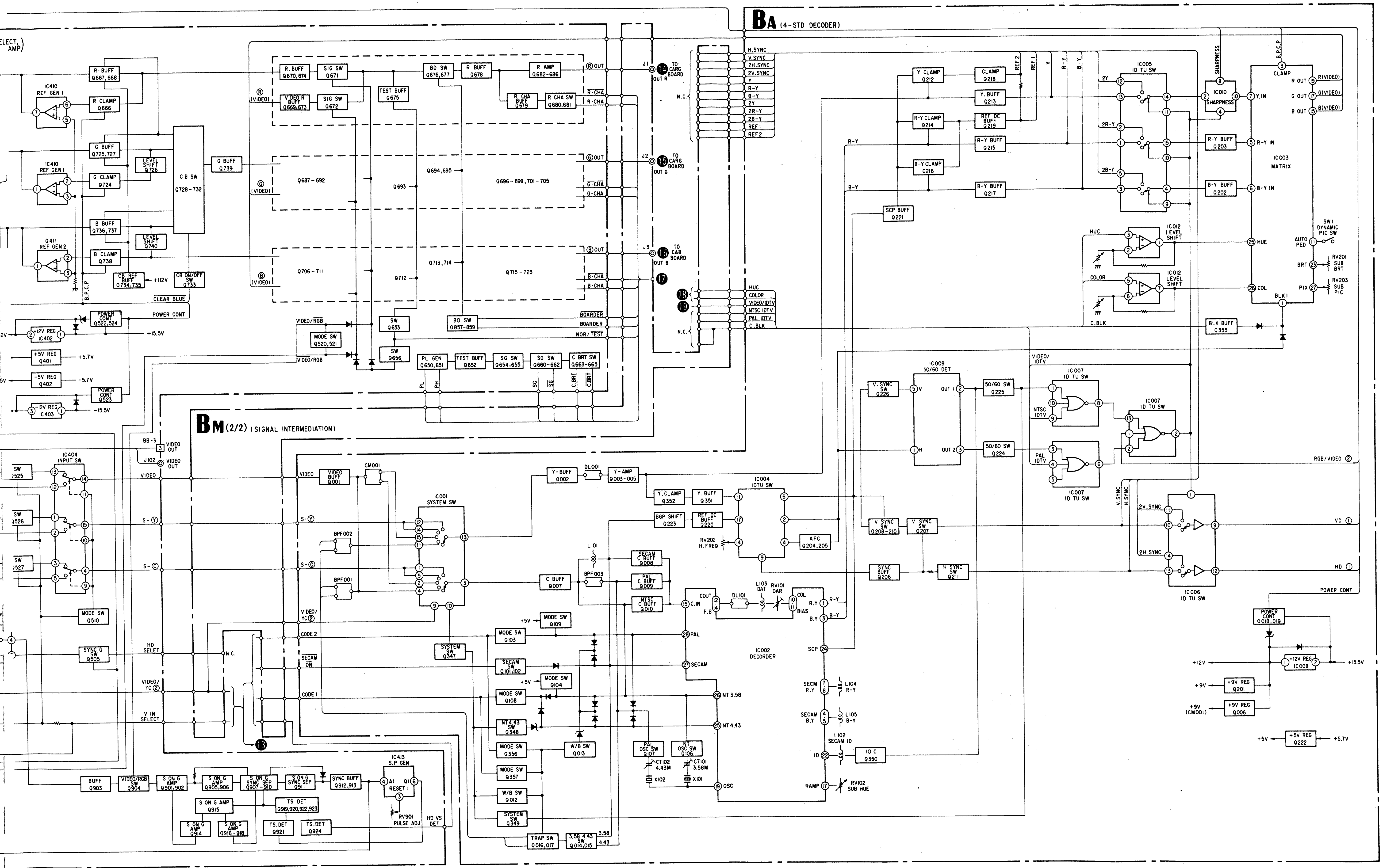
PAGE 5
INPUT INFO
fH : 00.0KHz
fV : 28.2Hz

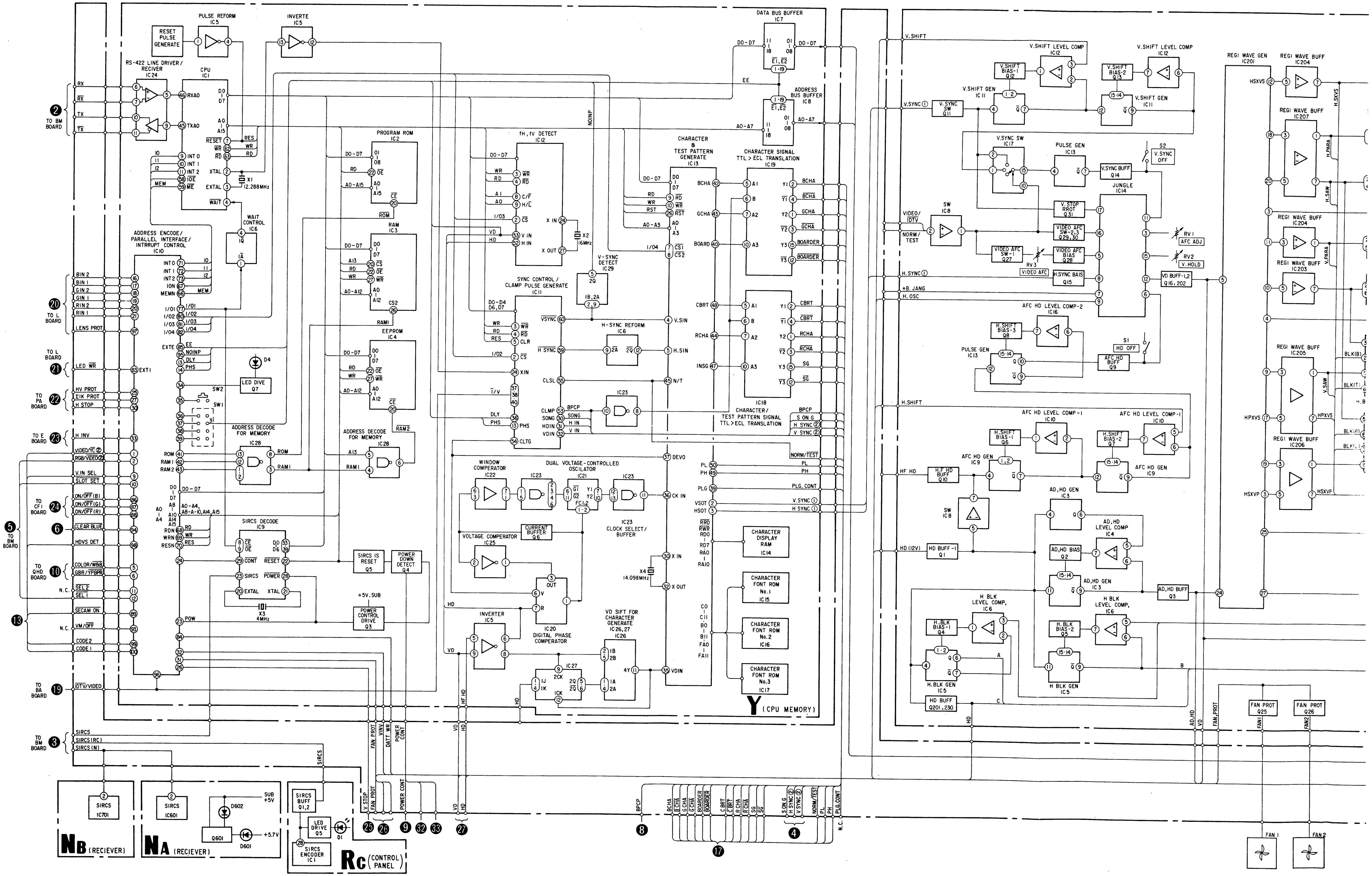
Adjust to RV2 28.0 ± 2Hz

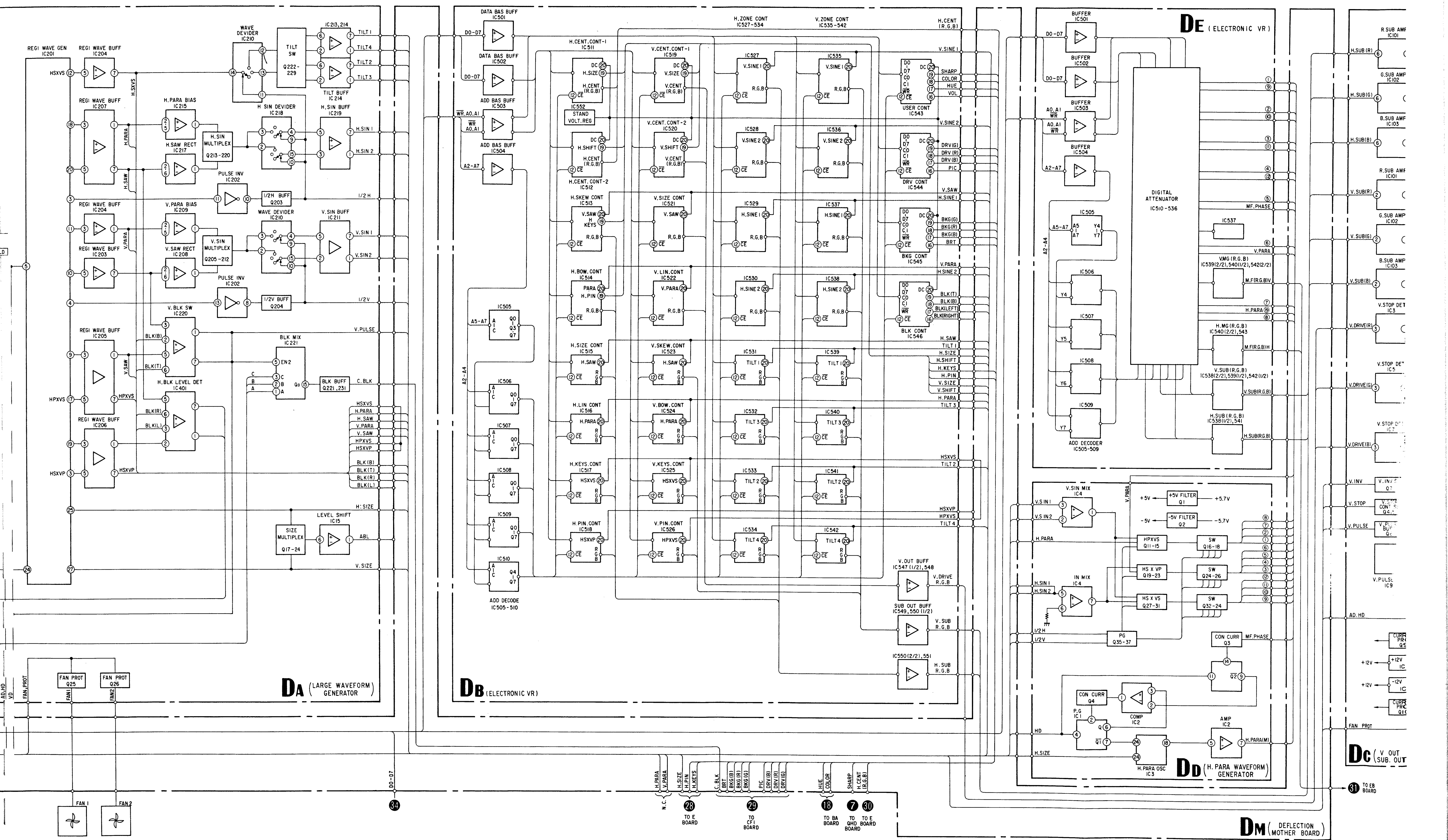
SECTION 7 DIAGRAMS

7-1. BLOCK DIAGRAMS

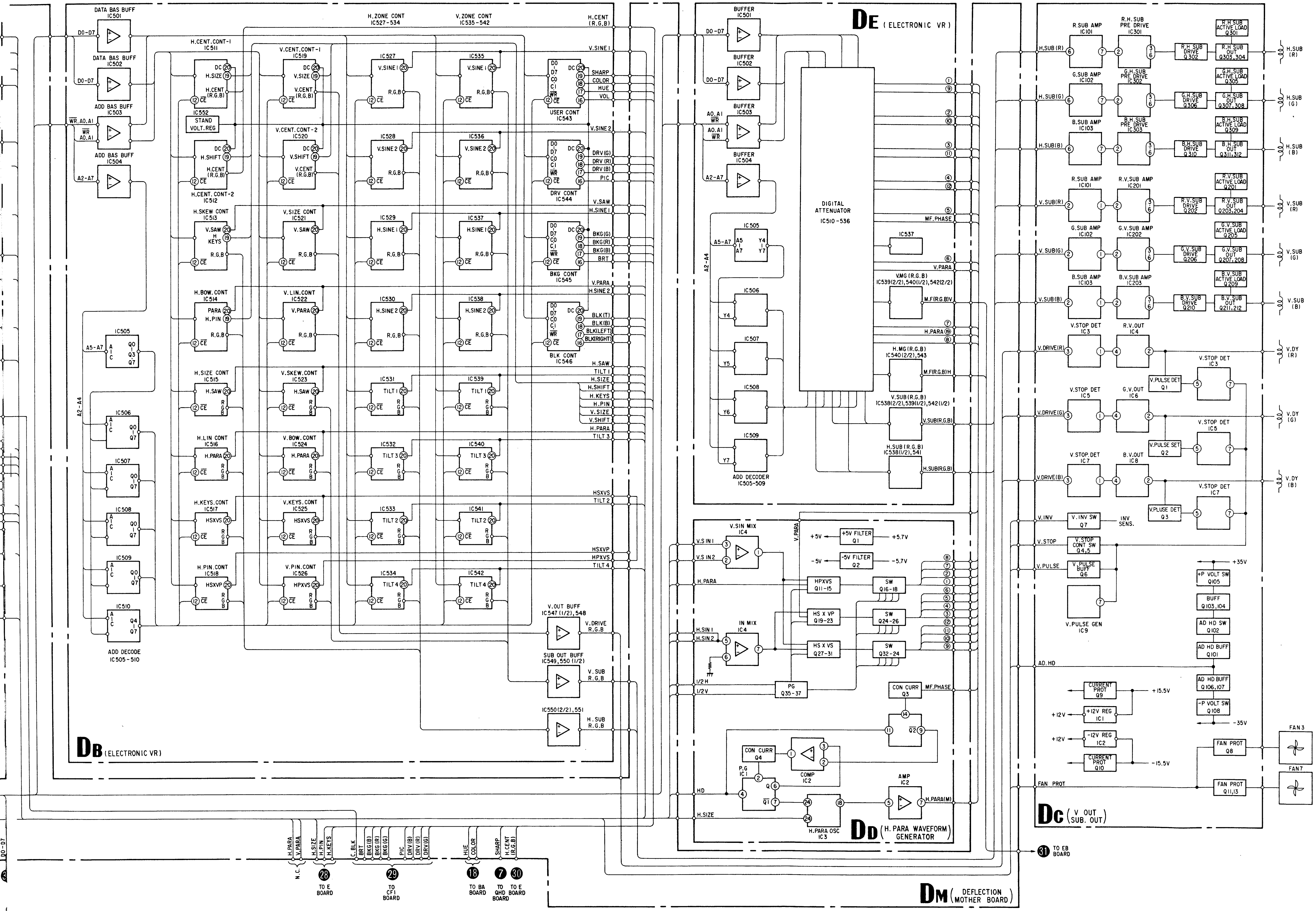


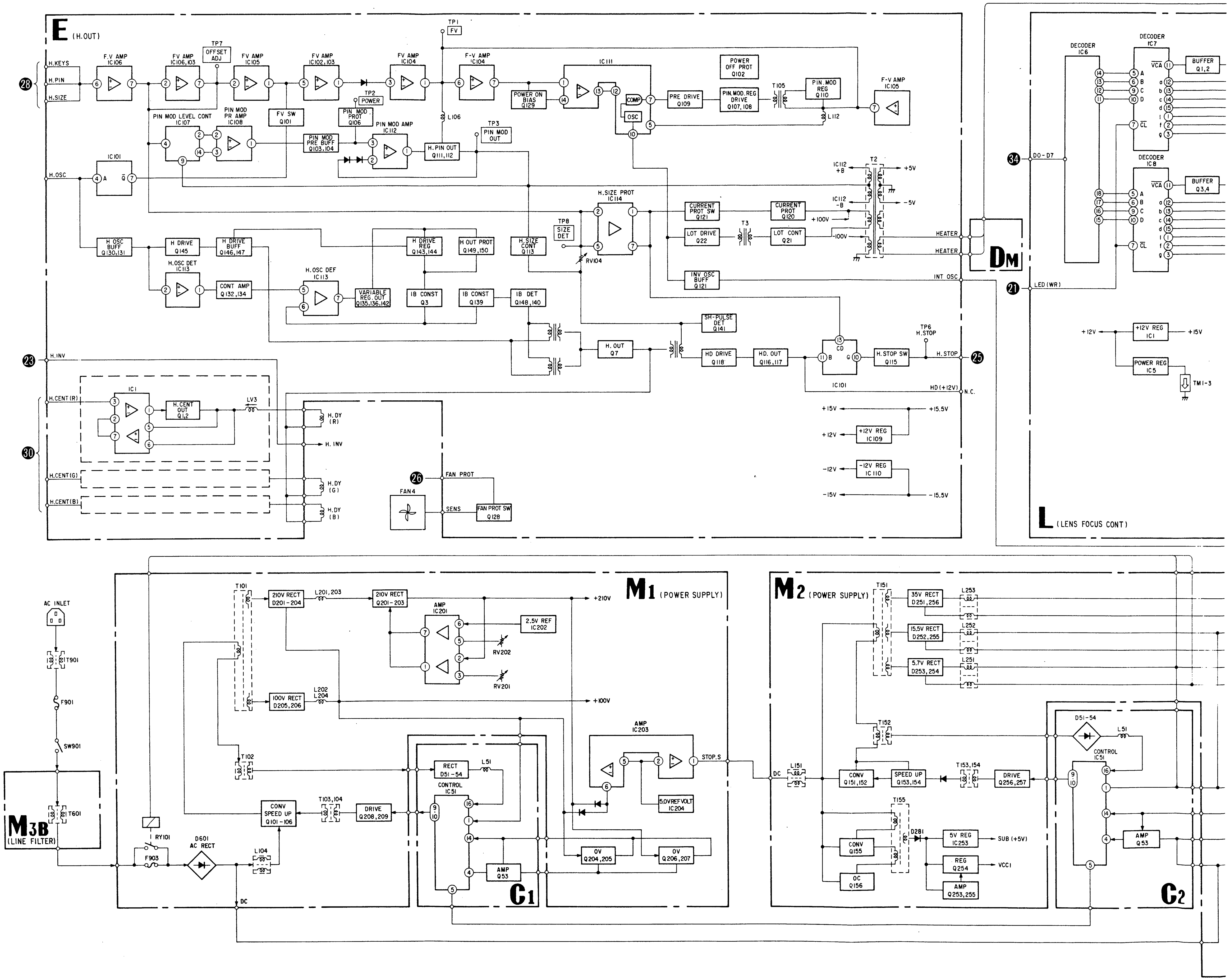

BA (4-STD DECODER)
BM (2/2) (SIGNAL INTERMEDIATION)
IC001 SYSTEM SW
IC002 DECORDER
IC003 MATRIX
IC004 IDTU SW
IC005 ID TU SW
IC006 ID TU SW
IC007 ID TU SW
IC009 50/60 DET
IC010 SHARPNESS
IC012 LEVEL SHIFT
IC404 INPUT SW
IC413 S.P GEN

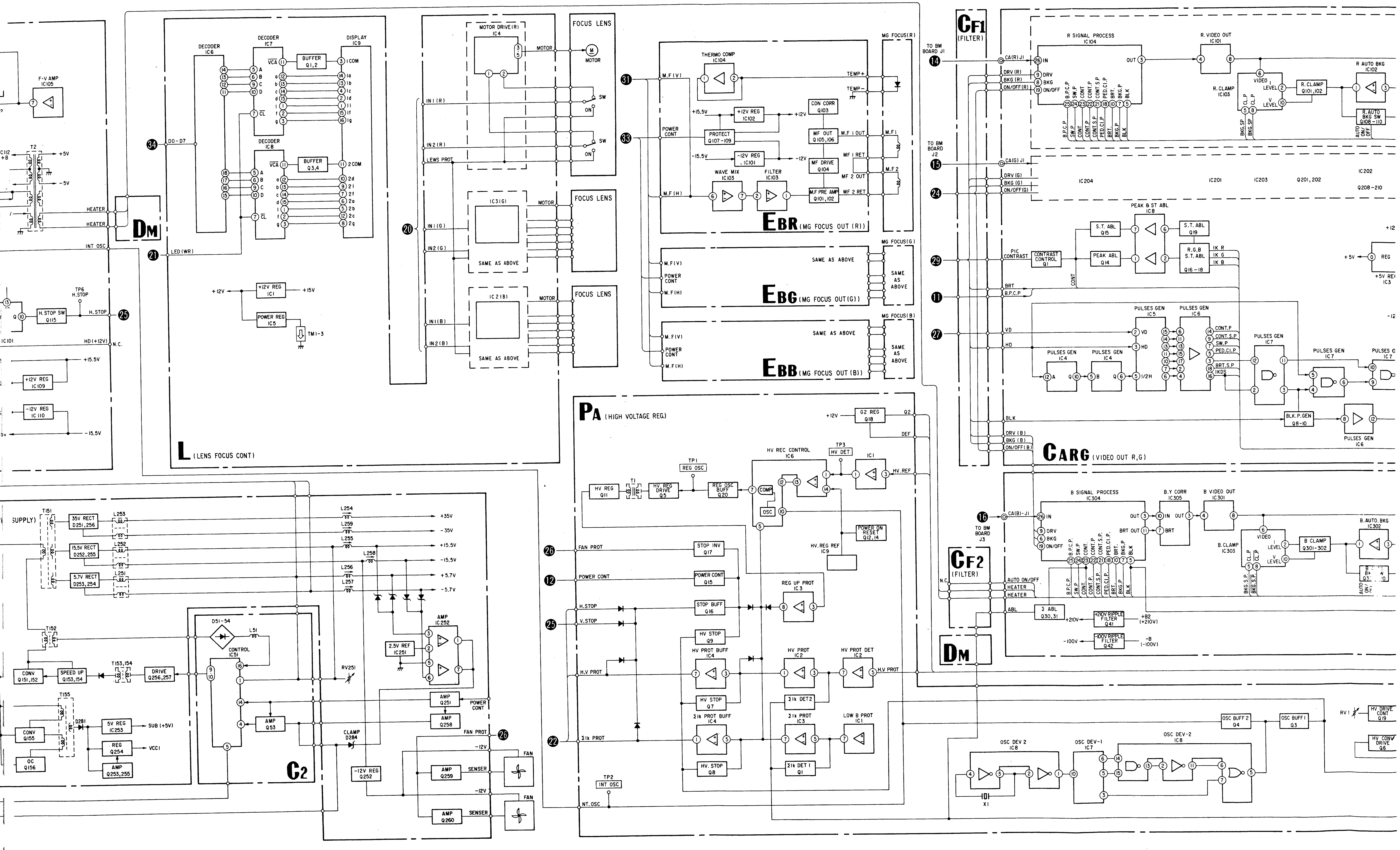

RESET PULSE GENERATE
PULSE REFORM IC5
INVERTE IC5
RS-422 LINE DRIVER / RECIVER IC24
CPU IC1
DATA BUS BUFFER IC7
ADDRESS BUS BUFFER IC8
PROGRAM ROM IC2
RAM IC3
EEPROM IC4
1H, 1V DETECT IC12
V-SYNC DETECT IC29
SYNC CONTROL / CLAMP PULSE GENERATE IC11
H-SYNC REFORM IC6
CHARACTER & TEST PATTERN GENERATE IC13
CHARACTER SIGNAL TTL > ECL TRANSLATION IC19
CHARACTER / TEST PATTERN SIGNAL TTL > ECL TRANSLATION IC18
ADDRESS ENCODE / PARALLEL INTERFACE / INTRRUPT CONTROL IC10
WAIT CONTROL IC6
ADDRESS DECODE FOR MEMORY IC28
LED DIVE Q7
SIRCS DECODE IC9
SIRCS IS RESET Q5
POWER DOWN DETECT Q4
POWER CONTROL DRIVE Q3
WINDOW COMPERATOR IC22
DUAL VOLTAGE-CONTROLLED OSCILATOR IC21
VOLTAGE COMPERATOR IC25
CURRENT BUFFER Q6
IC23 CLOCK SELECT / BUFFER
IC20 DIGITAL PHASE COMPERATOR
INVERTER IC5
VD SIFT FOR CHARACTER GENERATE IC26,27
CHARACTER DISPLAY RAM IC14
CHARACTER FONT ROM No.1 IC15
CHARACTER FONT ROM No.2 IC16
CHARACTER FONT ROM No.3 IC17
Y (CPU MEMORY)
V.SHIFT LEVEL COMP IC12
V.SHIFT GEN IC11
V.SYNC SW Q11
V.SYNC SW IC17
PULSE GEN IC13
JUNGLE IC14
SW IC8
AFC HD LEVEL COMP-2 IC16
AFC HD LEVEL COMP-1 IC10
AFC HD GEN IC9
AD,HD GEN IC3
AD,HD LEVEL COMP IC4
H BLK LEVEL COMP. IC6
H.BLK GEN IC5
H BLK GEN IC5
HD BUFF Q201,230
AD,HD BUFF Q3
REGI WAVE GEN IC201
REGI WAVE BUFF IC204
REGI WAVE BUFF IC207
REGI WAVE BUFF IC203
REGI WAVE BUFF IC205
REGI WAVE BUFF IC206
FAN PROT Q25
FAN PROT Q26
FAN 1
FAN 2
TO BM BOARD
TO L BOARD
TO PA BOARD
TO E BOARD
TO CFI BOARD
TO QHD BOARD
TO BA BOARD
NB (RECIEVER)
NA (RECIEVER)
Rc (CONTROL PANEL)
SIRCS IC701
SIRCS IC601
SIRCS BUFF Q1,2
LED DRIVE Q5
SIRCS ENCODER IC1

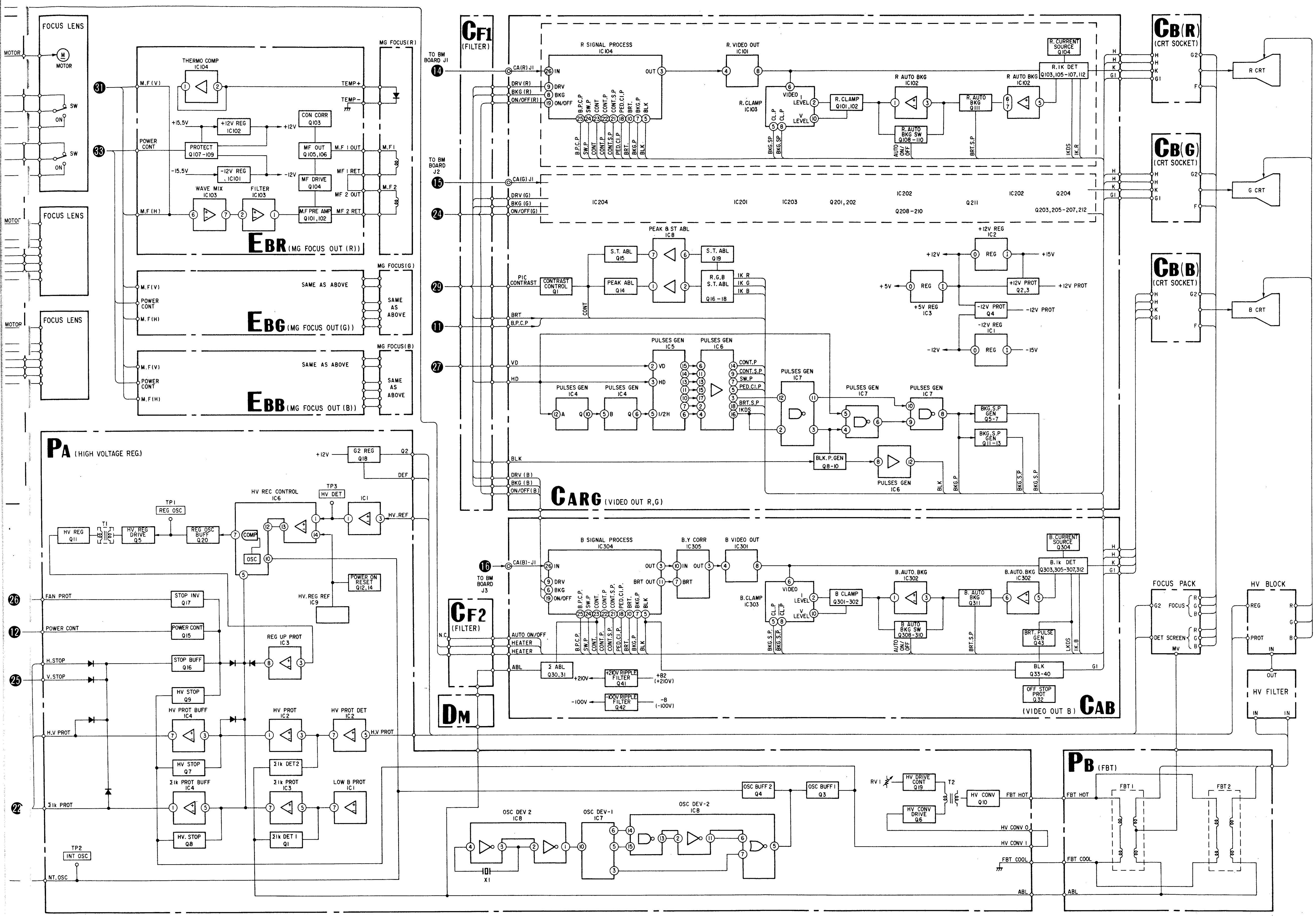


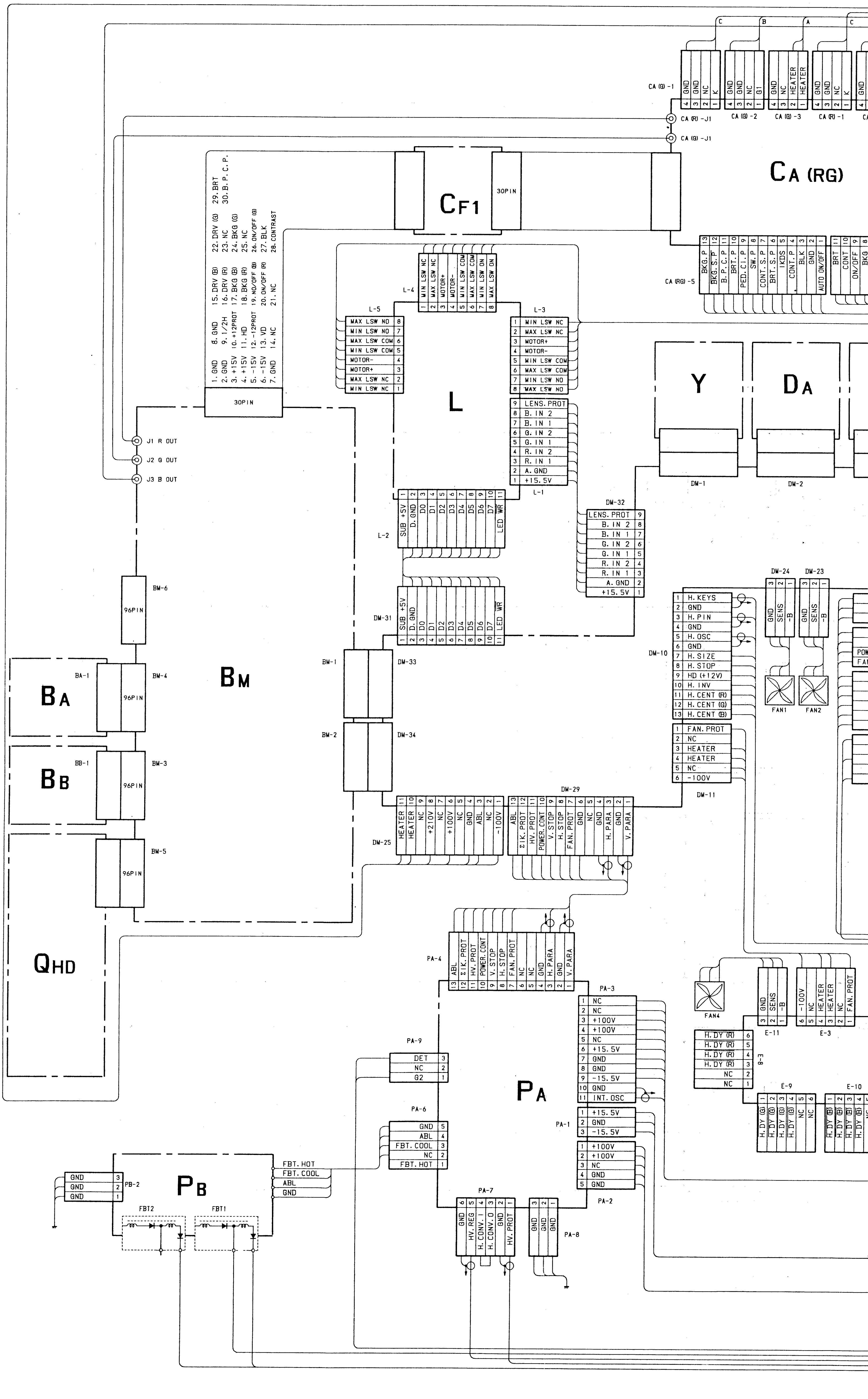
DA (LARGE WAVEFORM GENERATOR)
DB (ELECTRONIC VR)
DE (ELECTRONIC VR)
DD (H. PARA WAVEFORM GENERATOR)
DC (V OUT SUB. OUT)
DM (DEFLECTION MOTHER BOARD)
DIGITAL ATTENUATOR IC510-536
TO E BOARD
TO CFI BOARD
TO BA BOARD
TO QHD BOARD
TO EB BOARD
FAN 1
FAN 2

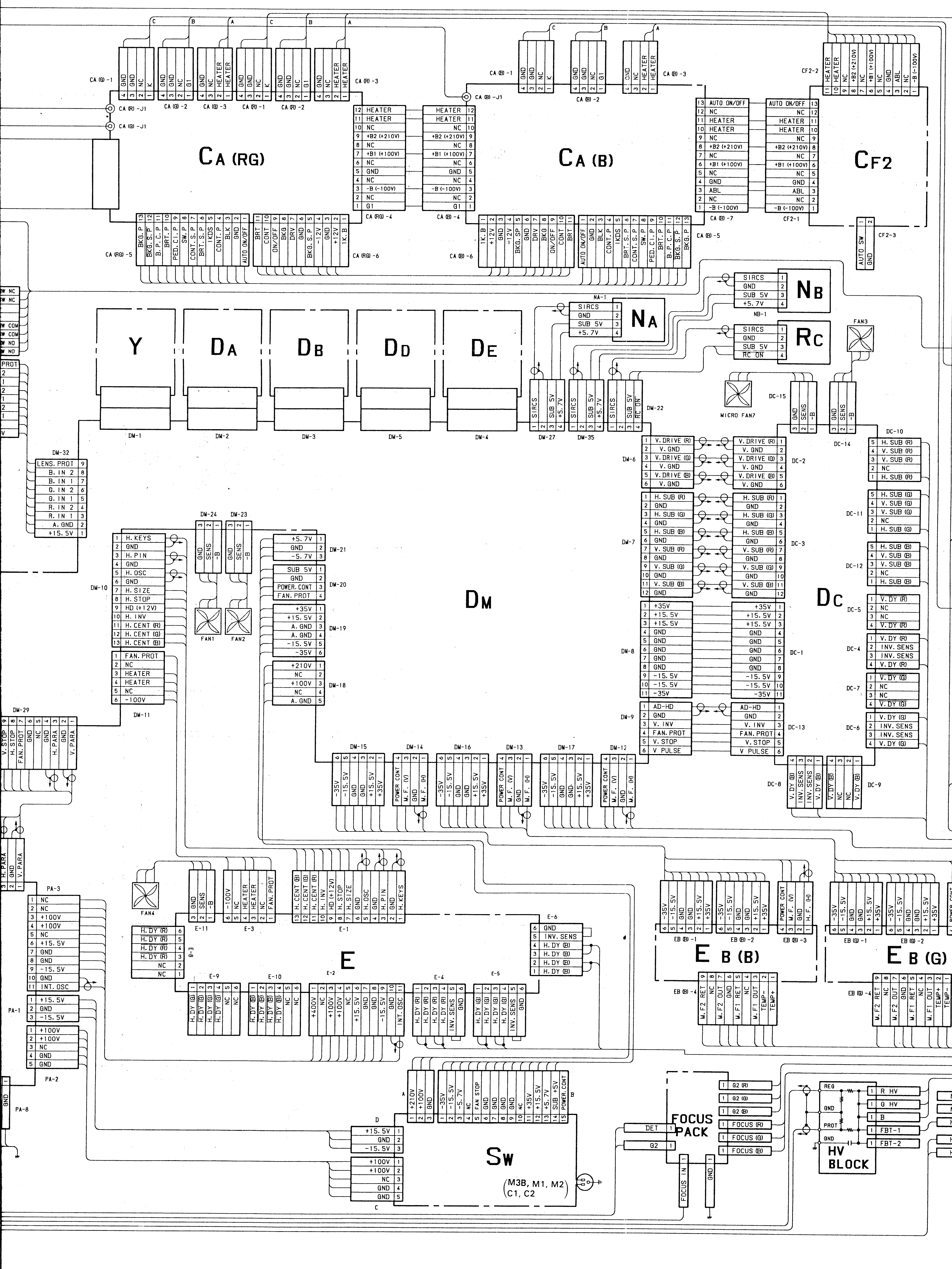

DB (ELECTRONIC VR)
DATA BAS BUFF IC501
DATA BAS BUFF IC502
ADD BAS BUFF IC503
ADD BAS BUFF IC504
ADD DECODE IC505-510
H.CENT.CONT-1 IC511
H.CENT.CONT-2 IC512
H.SKEW CONT IC513
H.BOW.CONT IC514
H.SIZE CONT IC515
H.LIN CONT IC516
H.KEYS.CONT IC517
H.PIN.CONT IC518
V.CENT.CONT-1 IC519
V.CENT.CONT-2 IC520
V.SIZE CONT IC521
V.LIN.CONT IC522
V.SKEW.CONT IC523
V.BOW.CONT IC524
V.KEYS.CONT IC525
V.PIN.CONT IC526
H.ZONE CONT IC527-534
V.ZONE CONT IC535-542
USER CONT IC543
DRV CONT IC544
BKG CONT IC545
BLK CONT IC546
V.OUT BUFF IC547 (1/2),548
SUB OUT BUFF IC549,550 (1/2)
IC550(2/2),551
DE (ELECTRONIC VR)
DIGITAL ATTENUATOR IC510-536
ADD DECODER IC505-509
DD (H.PARA WAVEFORM GENERATOR)
V.SIN MIX IC4
IN MIX IC4
H.PARA OSC IC3
DC (V OUT SUB. OUT)
V.PULSE GEN IC9
DM (DEFLECTION MOTHER BOARD)
TO E BOARD
TO CF1 BOARD
TO BA BOARD
TO QHD BOARD
TO E BOARD
TO EB BOARD
FAN3
FAN7


E (H.OUT)
M1 (POWER SUPPLY)
M2 (POWER SUPPLY)
M3B (LINE FILTER)
L (LENS FOCUS CONT)
DM
C1
C2

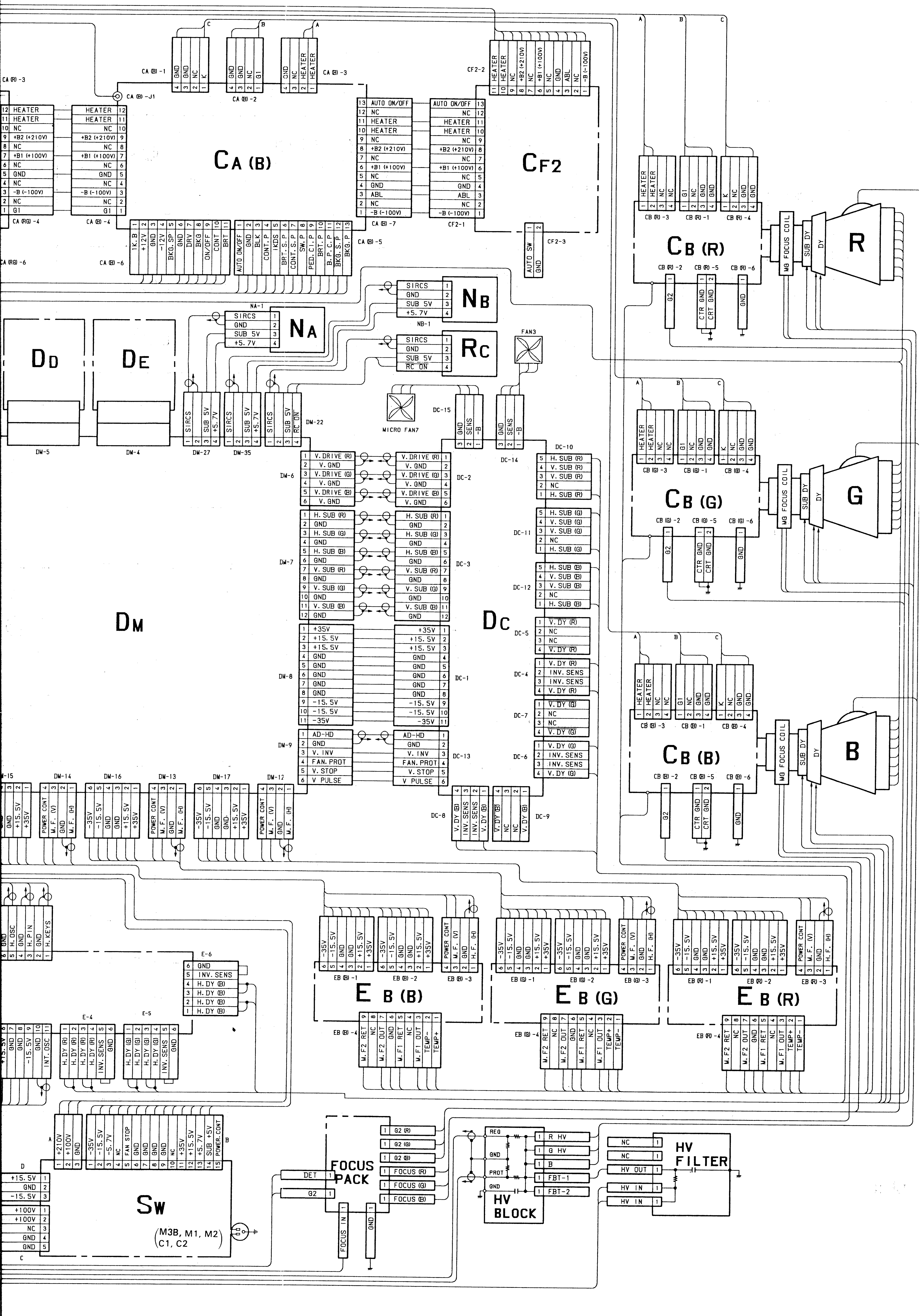

DM
L (LENS FOCUS CONT)
DECODER IC6
DECODER IC7
DECODER IC8
DISPLAY IC9
BUFFER Q1,2
BUFFER Q3,4
+12V REG IC1
POWER REG IC5
MOTOR DRIVE(R) IC4
IC3(G)
IC2(B)
SAME AS ABOVE
FOCUS LENS
MOTOR
THERMO COMP IC104
+12V REG IC102
PROTECT Q107-109
-12V REG IC101
WAVE MIX IC103
FILTER IC103
CON CORR Q103
MF OUT Q105,106
MF DRIVE Q104
M.F PRE AMP Q101,102
EBR (MG FOCUS OUT (R))
EBG (MG FOCUS OUT(G))
EBB (MG FOCUS OUT (B))
MG FOCUS(R)
MG FOCUS(G)
MG FOCUS(B)
PA (HIGH VOLTAGE REG)
HV REG Q11
HV REG DRIVE Q5
REG OSC BUFF Q20
HV REC CONTROL IC6
G2 REG Q18
POWER ON RESET Q12,14
HV REG REF IC9
STOP INV Q17
POWER CONT Q15
STOP BUFF Q16
REG UP PROT IC3
HV STOP Q9
HV PROT BUFF IC4
HV PROT IC2
HV PROT DET IC2
HV STOP Q7
Σ1k DET2
Σ1k PROT BUFF IC4
Σ1k PROT IC3
LOW B PROT IC1
HV STOP Q8
Σ1k DET1 Q1
C2
35V RECT D251,256
15.5V RECT D252,255
5.7V RECT D253,254
CONTROL IC51
AMP IC252
2.5V REF IC251
AMP Q251
AMP Q258
AMP Q53
CLAMP D284
-12V REG Q252
AMP Q259
AMP Q260
FAN
SENSER
CONV Q151,152
SPEED UP Q153,154
DRIVE Q256,257
CONV Q155
5V REG IC253
REG Q254
AMP Q253,255
OC Q156
CF1 (FILTER)
CF2 (FILTER)
R SIGNAL PROCESS IC104
R. VIDEO OUT IC101
R. CLAMP IC103
R. CLAMP Q101,102
R AUTO BKG IC102
R.AUTO BKG SW Q108-110
PEAK & ST ABL IC8
S.T. ABL Q15
S.T. ABL Q19
PEAK ABL Q14
CONTRAST CONTROL Q1
R,G,B S.T. ABL Q16-18
PULSES GEN IC5
PULSES GEN IC6
PULSES GEN IC4
PULSES GEN IC7
BLK.P.GEN Q8-10
CARG (VIDEO OUT R,G)
B SIGNAL PROCESS IC304
B.Y CORR IC305
B VIDEO OUT IC301
B.CLAMP IC303
B CLAMP Q301-302
B.AUTO.BKG IC302
Σ ABL Q30,31
+210V RIPPLE FILTER Q41
-100V RIPPLE FILTER Q42
OSC DEV 2 IC8
OSC DEV-1 IC7
OSC DEV-2 IC8
OSC BUFF 2 Q4
OSC BUFF 1 Q3
HV DRIVE CONT Q19
HV CONV DRIVE Q6

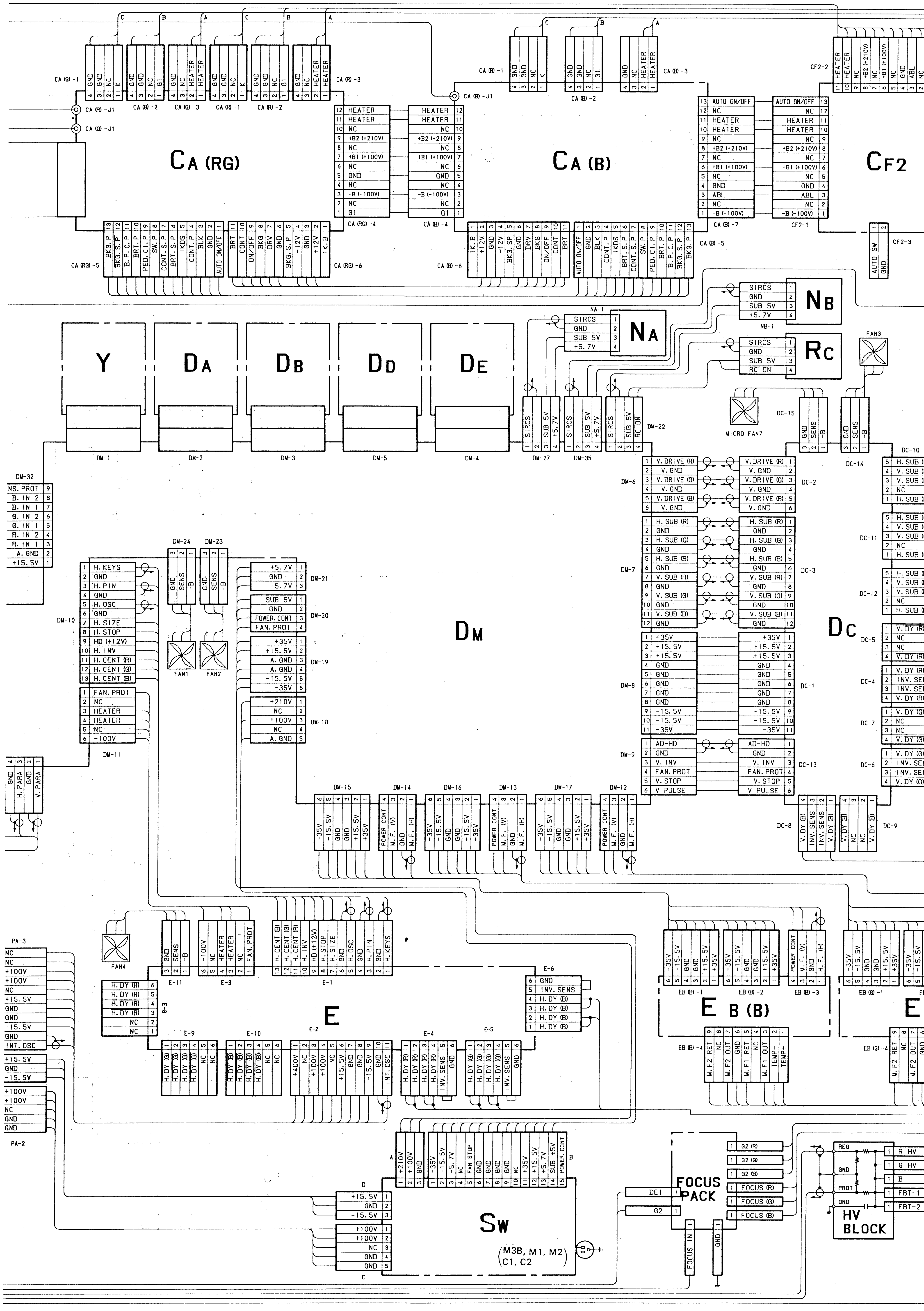

FOCUS LENS
EBR (MG FOCUS OUT (R))
EBG (MG FOCUS OUT (G))
EBB (MG FOCUS OUT (B))
PA (HIGH VOLTAGE REG.)
CF1 (FILTER)
CF2 (FILTER)
DM
CARG (VIDEO OUT R,G)
CAB (VIDEO OUT B)
CB(R) (CRT SOCKET)
CB(G) (CRT SOCKET)
CB(B) (CRT SOCKET)
R CRT
G CRT
B CRT
FOCUS PACK
HV BLOCK
HV FILTER
PB (FBT)
R SIGNAL PROCESS IC104
R.VIDEO OUT IC101
B SIGNAL PROCESS IC304
B VIDEO OUT IC301
PEAK & ST ABL IC8
PULSES GEN
HV REC CONTROL IC6
OSC DEV 2 IC8
OSC DEV-1 IC7
OSC DEV-2 IC8

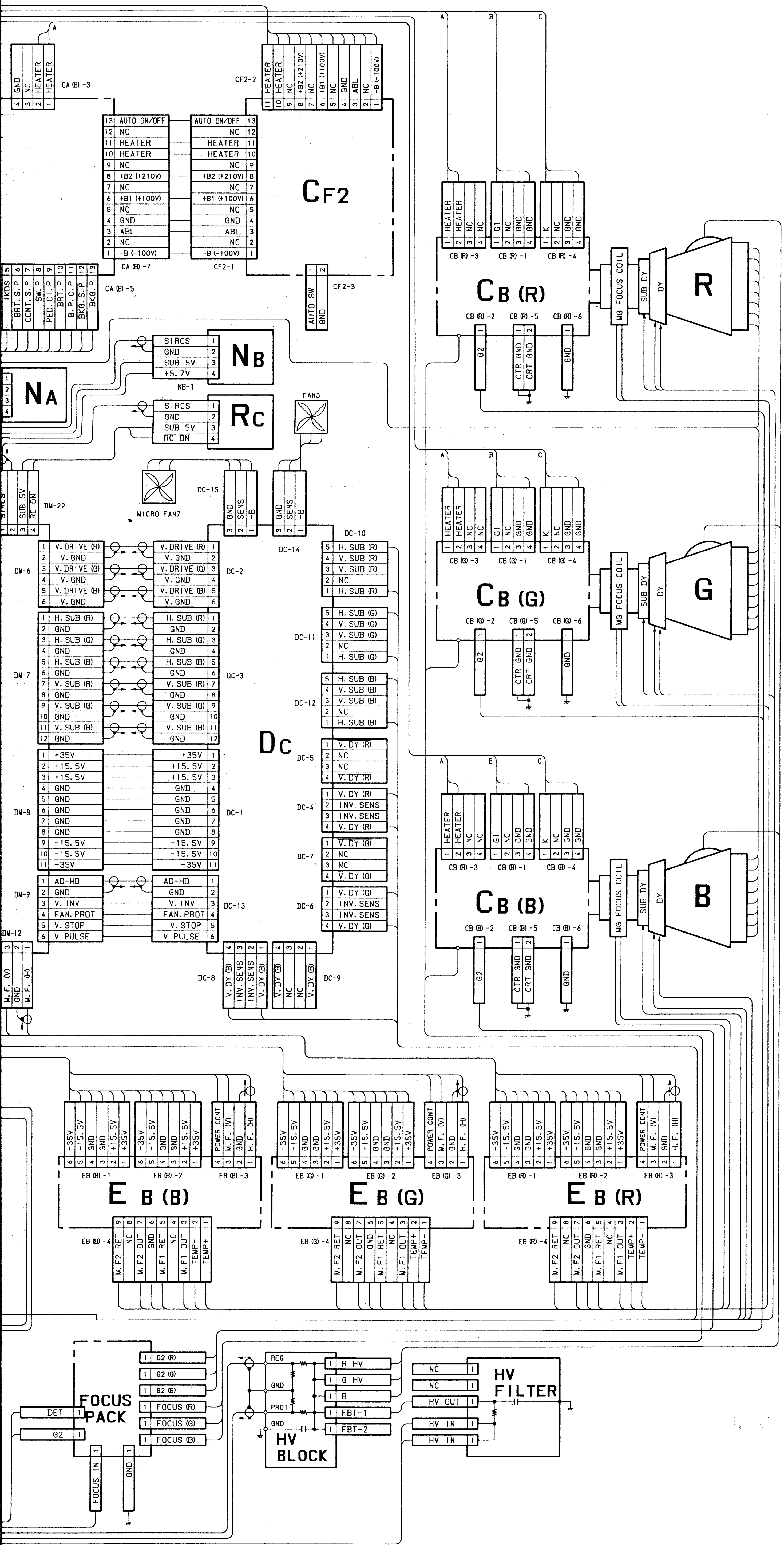




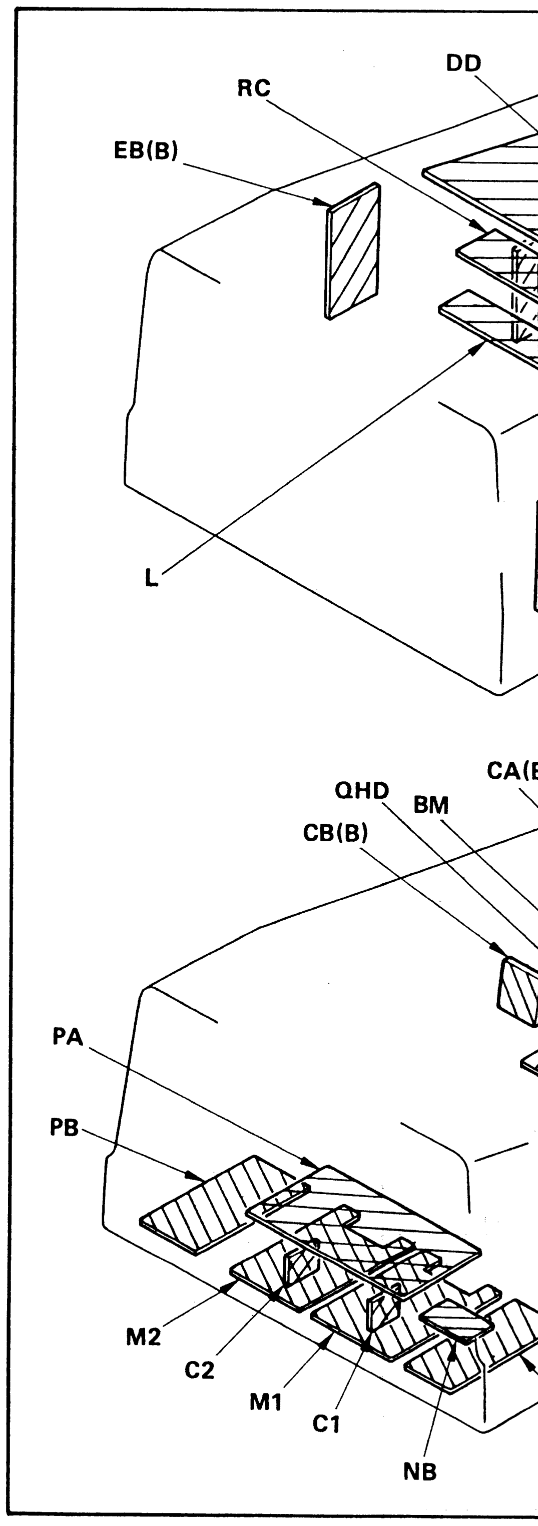
CA (RG)
CA (B)
CF2
NB
NA
RC
Y
DA
DB
DD
DE
DM
DC
E
EB (B)
EB (G)
SW
(M3B, M1, M2
C1, C2)
FOCUS PACK
HV BLOCK
FAN1
FAN2
FAN3
FAN4
MICRO FAN7

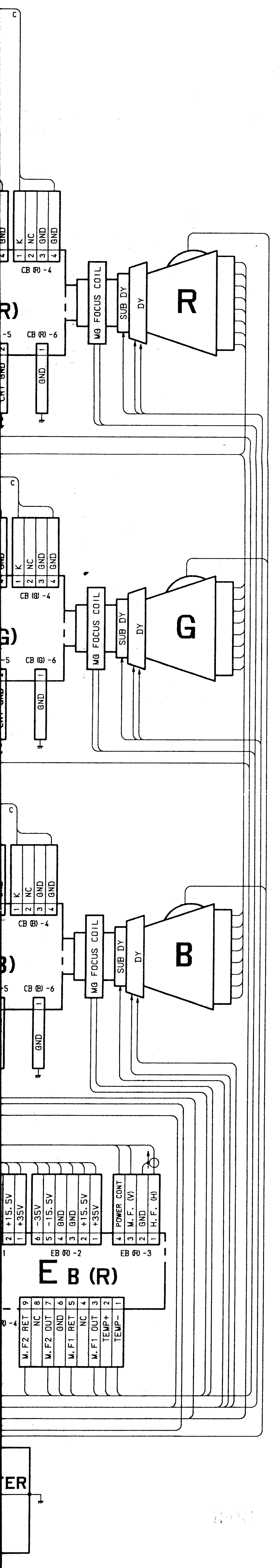



CA (RG)
CA (B)
CF2
NA
NB
RC
Y
DA
DB
DD
DE
DM
DC
E
EB (B)
SW
FOCUS PACK
HV BLOCK

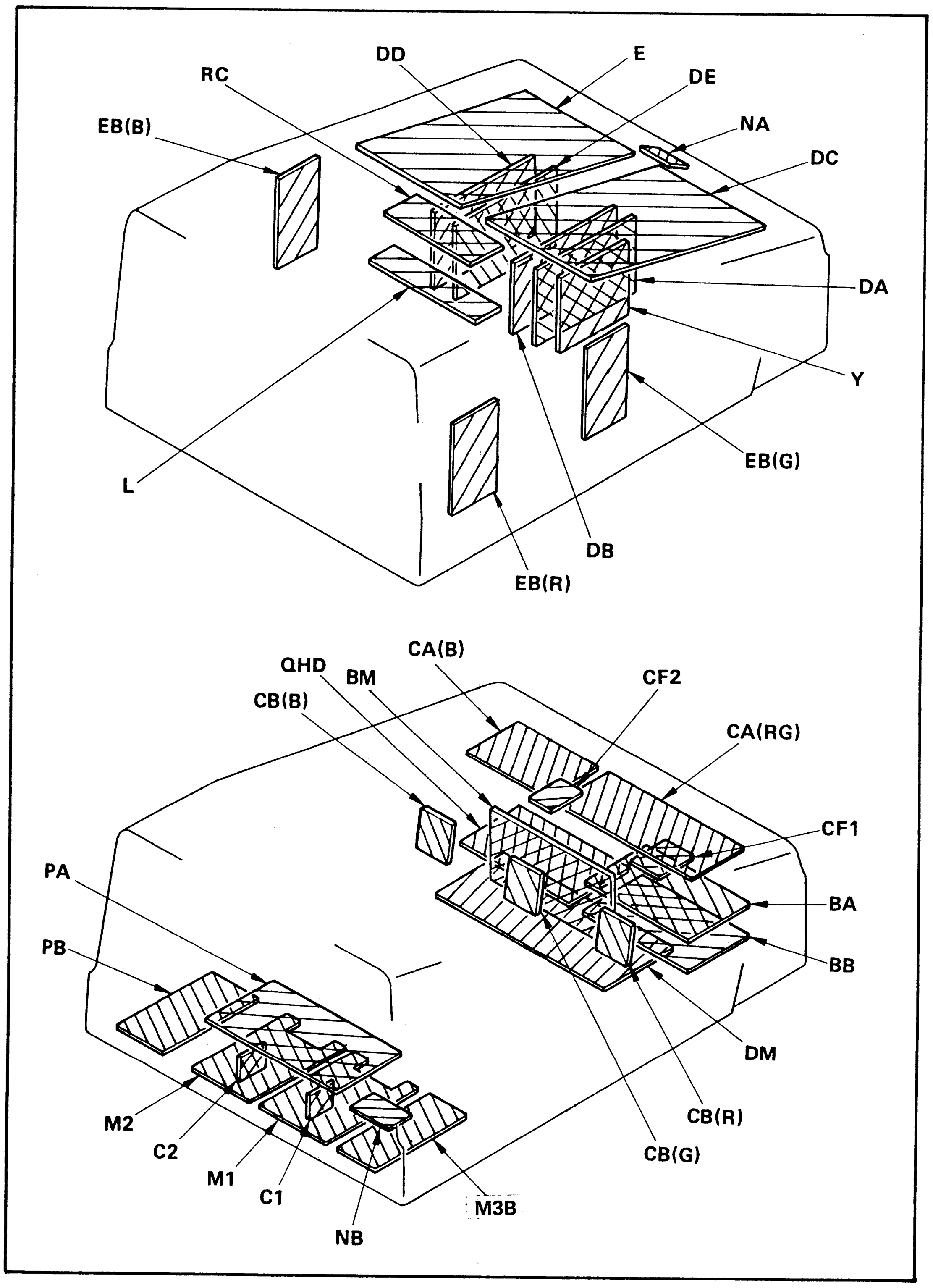


7-3. CIRCUIT BOARDS LOCATION





7-3. CIRCUIT BOARDS LOCATION



7-4. SCHMATIC DIAGRAMS AND PRINTED WIRING BOARDS

Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics.
- Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch: 5 mm
Rating electrical power ¼ W

- All resistors are in ohms.
- [nonflammable resistor symbol] : nonflammable resistor.
- [fusible resistor symbol] : fusible resistor.
- △ : internal component.
- ▭ : panel designation, and adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- The components identified by [mark] in this basic schematic diagram have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.
- When replacing components identified by [mark], make the necessary adjustments indicated. If results do not meet the specified value, change the component identified by [mark] and repeat the adjustment until the specified value is achieved. (Refer to [mark] R1, 4, 29, 30, 33, 34, 41 and R42 adjust on page 99 – 102.)
- When replacing the part in below table, be sure to perform the related adjustment.

Part replaced (◪)	Adjustment (⧗)
IC2, Q7, D9, D12, C13, R20, R21, R22, R23, R24, R32, R33, R34, R35, R36, R82 (PA Board) HV BLOCK, PA mount	R33, R34 (HV hold-down)
IC1, IC6, IC7, IC8, D13, C16, R37, R38, R39, R40, R41, R42, R53, R55, R56, R58, R59, R129, X1 (PA Board) HV BLOCK, PA mount, PB mount	R41, R42 (HV regulation)
IC1, IC3, IC5, Q8, D4, D5, D10, D11, R9, R10, R26, R28, R29, R30, R31, R88, R95 (PA Board) PA mount	R29, R30 (LOW B protector)
IC2, IC3, IC5, Q1, Q2, Q7, Q8, D4, D5, D9, R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R20, R21, R22, R23, R24, R43, R44, R45, R46, R47, R82, R88, R119, R120, R121, R122 (PA Board) R199 (DA Board) PA mount, PB mount	R1, R4 (Beam current protector)

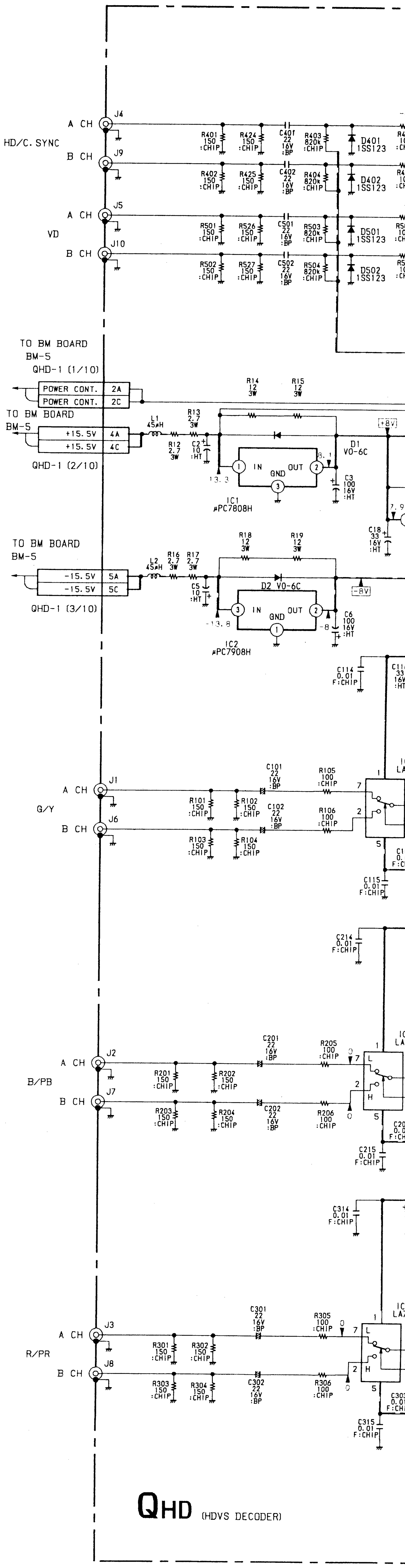
- All voltages are in V.
- Readings are taken with a 10 MΩ digital multimeter.
- Readings are taken with a PAL color-bar signal input.
  - no mark : with PAL color-bar signal received.
  - ( ) : with SECAM color-bar signal received.
  - 〈 〉 : with NTSC3.58 color-bar signal received.
  - 《 》 : with NTSC4.43 color-bar signal received.
  - * : measurement impossibility.
- Voltage variations may be noted due to normal production tolerances.
- ▬▬ : B + bus.
- ▬ ▬ ▬ : B – bus.
- ░░▷ : signal path.

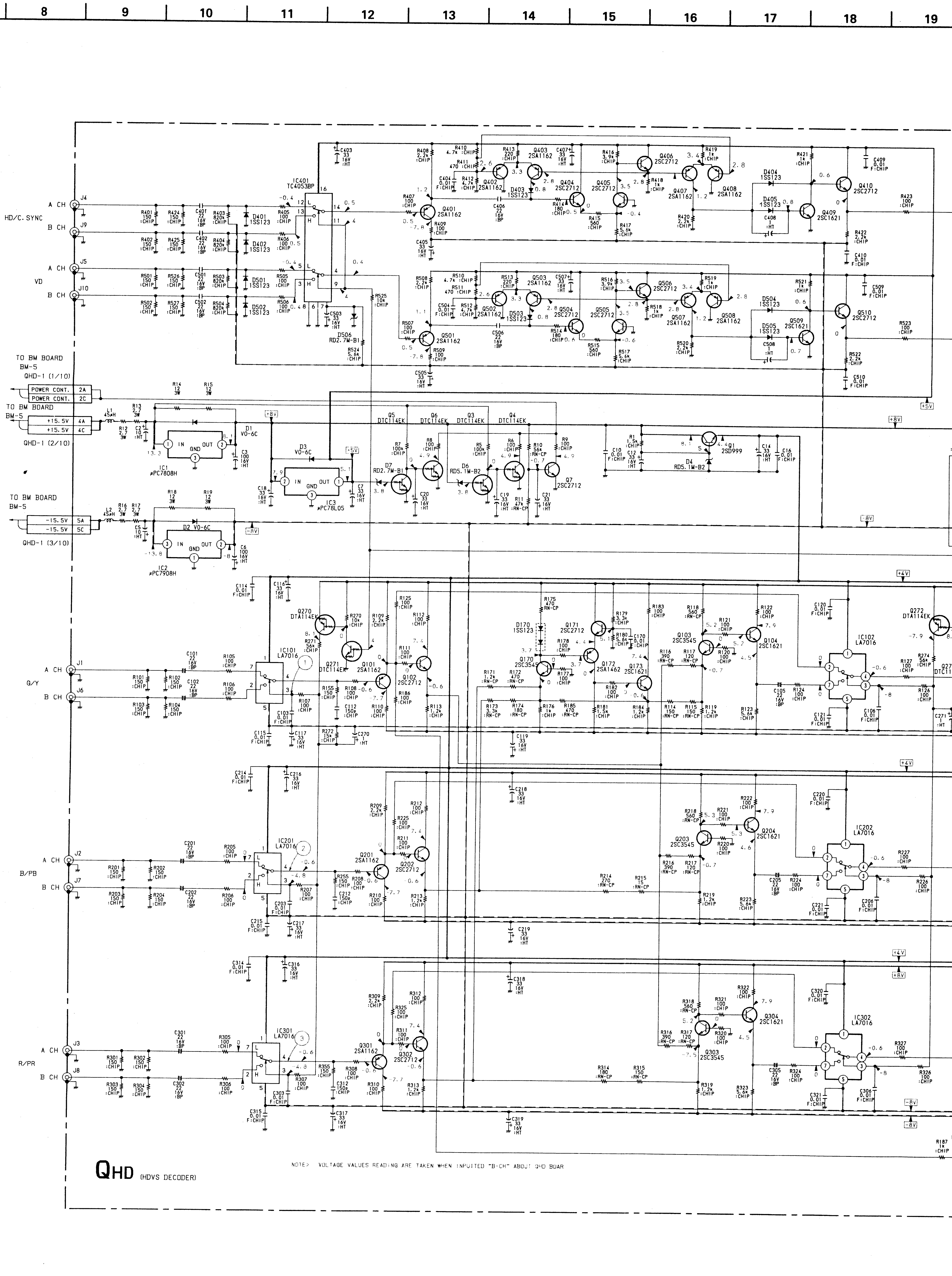
Reference information

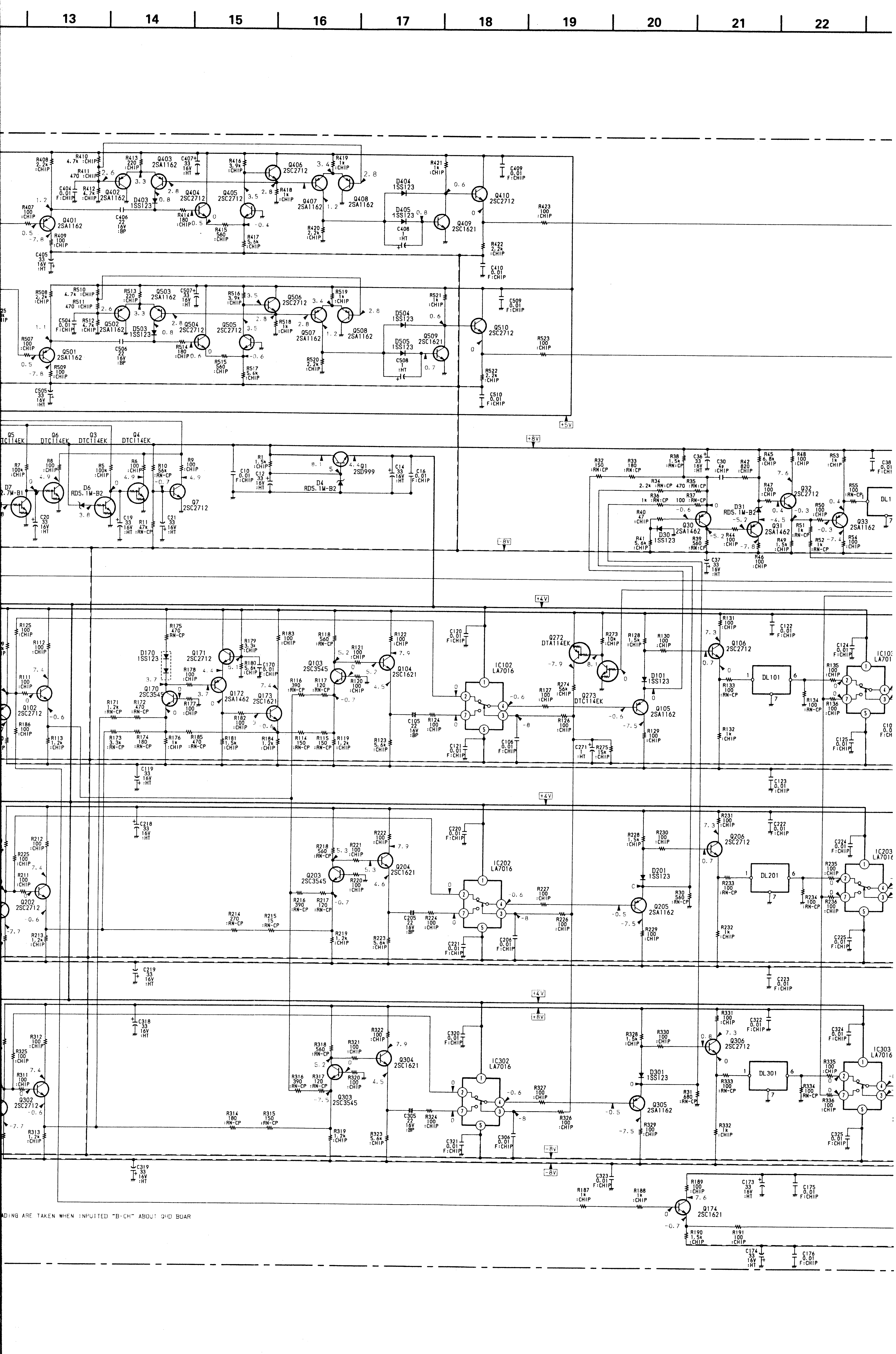
RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RW	NONFLAMMABLE WIREWOUND
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

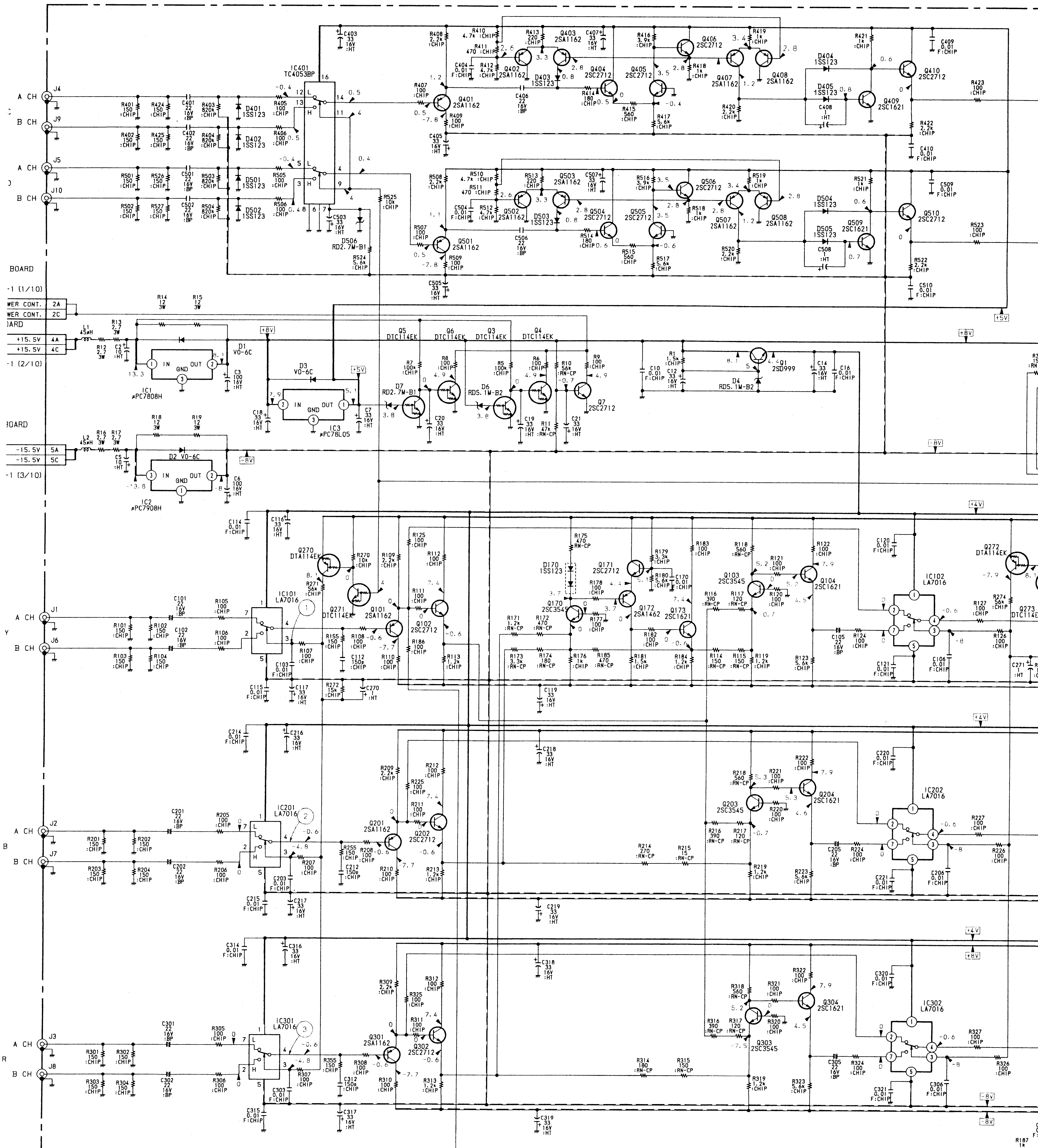
QHD	IC1	μ PC7808H	+8V REG	273	DTC114EK	CONTROL SW
	2	μ PC7908H	−8V REG	274	DTA114EK	CONTROL SW
	3	μ PC78L05	+5V REG	275	DTC114EK	CONTROL SW
	101	LA7016	VIDEO SW	301	2SA1162	VIDEO BUFF
	102	LA7016	VIDEO SW	302	2SC2712	VIDEO BUFF
	103	LA7016	VIDEO SW	303	2SC3545	VIDEO MIX AMP
	201	LA7016	VIDEO SW	304	2SC1621	VIDEO BUFF
	202	LA7016	VIDEO SW	305	2SA1162	VIDEO BUFF
	203	LA7016	VIDEO SW	306	2SC2712	VIDEO BUFF
	301	LA7016	VIDEO SW	307	2SC3545	VIDEO MIX AMP
	302	LA7016	VIDEO SW	308	2SC1621	VIDEO BUFF
	303	LA7016	VIDEO SW	309	2SC3545	VIDEO BUFF
	401	TC4053BP	SYNC SW	310	2SA1462	VIDEO BUFF
				401	2SA1162	SYNC BUFF
	Q1	2SD999	+4V REGURATOR	402	2SA1162	SYNC CHIP CLAMP
	3	DTC114EK	PROT DETECTOR	403	2SA1162	SYNC CHIP CLAMP
	4	DTC114EK	PROT DETECTOR	404	2SC2712	SYNC BUFF
	5	DTC114EK	PROT DETECTOR	405	2SC2712	SYNC AMP
	6	DTC114EK	PROT DETECTOR	406	2SC2712	SYNC BUFF
	7	2SC2712	PROT DETECTOR	407	2SA1162	SYNC COMPARATOR
	30	2SA1462	VIDEO MIX AMP	408	2SA1162	SYNC COMPARATOR
	31	2SA1462	VIDEO BUFF	409	2SC1621	SYNC AMP
	32	2SC2712	VIDEO BUFF	410	2SC2712	SYNC BUFF
	33	2SA1162	VIDEO BUFF	501	2SA1162	SYNC BUFF
	34	2SA1162	VIDEO BUFF	502	2SA1162	SYNC CHIP CLAMP
	35	2SC2712	VIDEO BUFF	503	2SA1162	SYNC CHIP CLAMP
	36	2SC2712	VIDEO BUFF	504	2SC2712	SYNC BUFF
	37	2SC3545	VIDEO MIX AMP	505	2SC2712	SYNC AMP
	38	2SC3545	GAIN CONTROL	506	2SC2712	SYNC BUFF
	39	2SC3545	GAIN CONTROL	507	2SA1162	SYNC COMPARATOR
	40	2SA1462	VIDEO AMP	508	2SA1162	SYNC COMPARATOR
	41	2SC3545	VIDEO BUFF	509	2SC1621	SYNC AMP
	42	2SA1162	VIDEO BUFF	510	2SC2712	SYNC BUFF
	101	2SA1162	VIDEO BUFF			
	102	2SC2712	VIDEO BUFF	D1	V06C	REG PROT
	103	2SC3545	VIDEO MIX AMP	2	V06C	REG PROT
	104	2SC1621	VIDEO BUFF	3	V06C	REG PROT
	105	2SA1162	VIDEO BUFF	4	RD5.1MB2	+4V REG
	106	2SC2712	VIDEO BUFF	6	RD5.1MB2	+4V REG
	107	2SC3545	VIDEO MIX AMP	7	RD2.7MB1	PROT DETECT
	108	2SC1621	VIDEO BUFF	30	1SS123	VOLT DET
	109	2SC3545	VIDEO BUFF	31	RD5.1MB2	DC LEVEL CONV
	110	2SA1462	VIDEO BUFF	32	1SS123	TEMP COMP
	170	2SC3545	VIDEO MIX AMP	101	1SS123	VOLT DET
	171	2SC2712	VIDEO AMP	102	1SS123	VIAS
	172	2SA1462	VIDEO BUFF	170	1SS123	TEMP COMP
	173	2SC1621	VIDEO BUFF	201	1SS123	VOLT DET
	174	2SC1621	VIDEO BUFF	202	1SS123	VIAS
	201	2SA1162	VIDEO BUFF	301	1SS123	VOLT DET
	202	2SC2712	VIDEO BUFF	302	1SS123	VIAS
	203	2SC3545	VIDEO MIX AMP	401	1SS123	CLAMP
	204	2SC1621	VIDEO BUFF	402	1SS123	CLAMP
	205	2SA1162	VIDEO BUFF	403	1SS123	CLAMP
	206	2SC2712	VIDEO BUFF	404	1SS123	SAT PROT
	207	2SC3545	VIDEO MIX AMP	405	1SS123	SAT PROT
	208	2SC1621	VIDEO BUFF	501	1SS123	CLAMP
	209	2SC3545	VIDEO BUFF	502	1SS123	CLAMP
	210	2SA1462	VIDEO BUFF	503	1SS123	CLAMP
	270	DTA114EK	CONTROL SW	504	1SS123	SAT PROT
	271	DTC114EK	CONTROL SW	505	1SS123	SAT PROT
	272	DTA114EK	CONTROL SW	506	RD2.7MB1	DC LEVEL




8 9 10 11 12 13 14 15 16 17 18 19
HD/C. SYNC
VD
G/Y
B/PB
R/PR
A CH
B CH
TO BM BOARD
BM-5
QHD-1 (1/10)
QHD-1 (2/10)
QHD-1 (3/10)
POWER CONT.
+15.5V
-15.5V
IC401 TC4053BP
IC101 LA7016
IC201 LA7016
IC301 LA7016
IC102 LA7016
IC202 LA7016
IC302 LA7016
IC1 μPC7808H
IC2 μPC7908H
IC3 μPC78L05
NOTE> VOLTAGE VALUES READING ARE TAKEN WHEN INPUITED "B-CH" ABOUT QHD BOAR
QHD (HDVS DECODER)

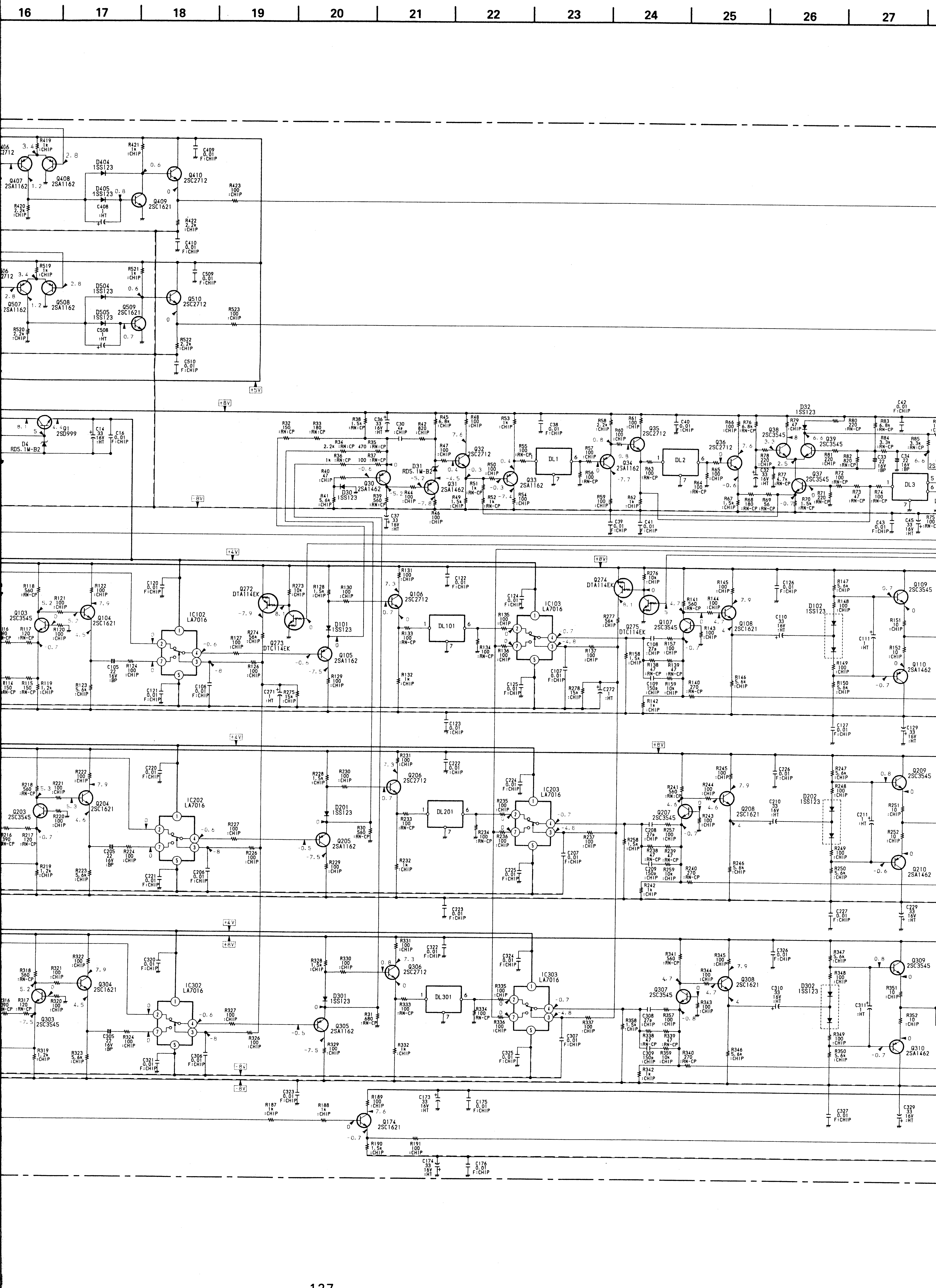

13
14
15
16
17
18
19
20
21
22
IC102 LA7016
IC202 LA7016
IC302 LA7016
DL101
DL201
DL301
+5V
+8V
-8V
+4V
ADING ARE TAKEN WHEN INPUTTED "B-CH" ABOUT QHD BOAR

B | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19

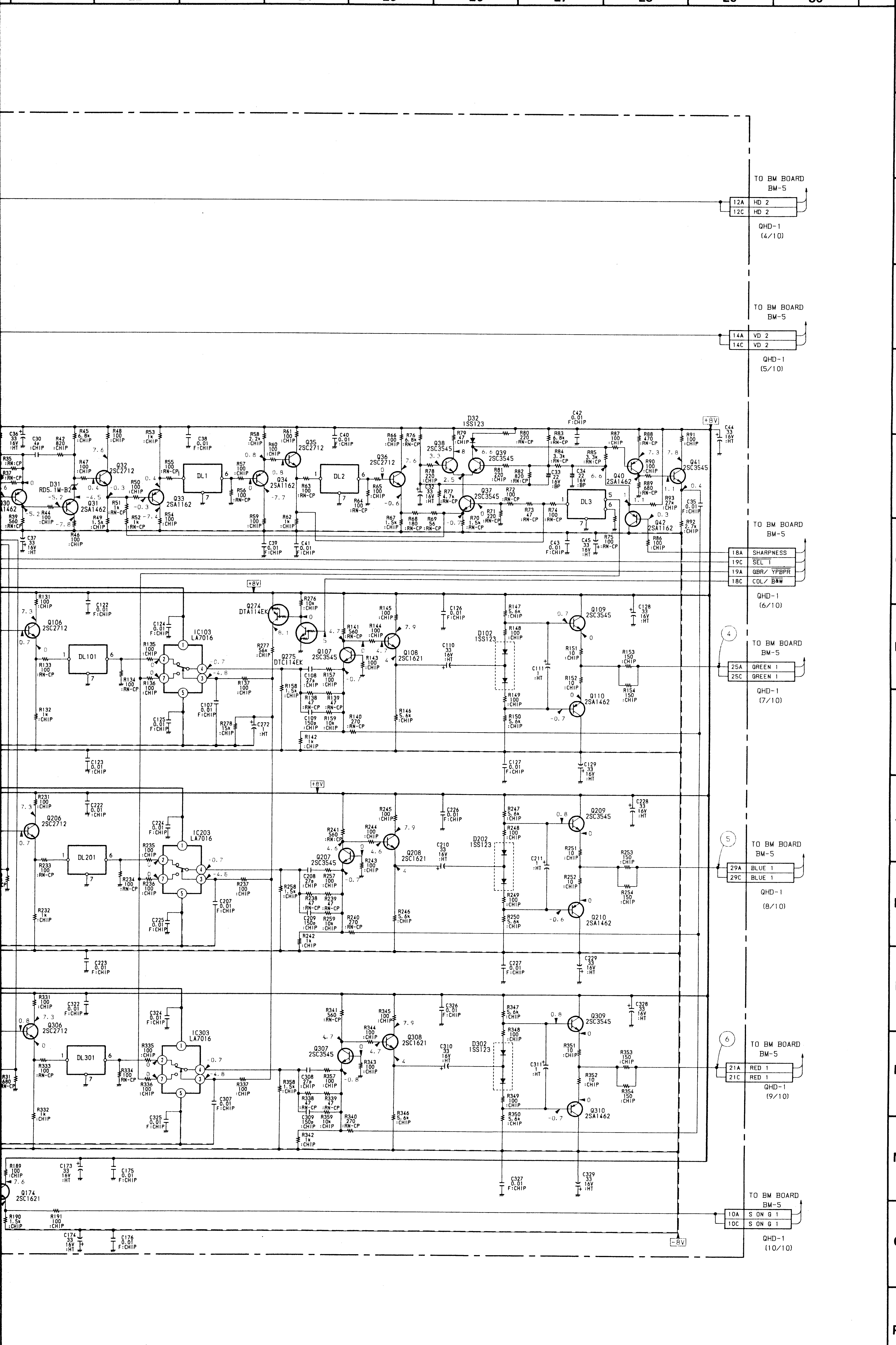


QHD (HDVS DECODER)

NOTE: VOLTAGE VALUES READING ARE TAKEN WHEN INPUTTED "B-CH" ABOUT QHD BOAR



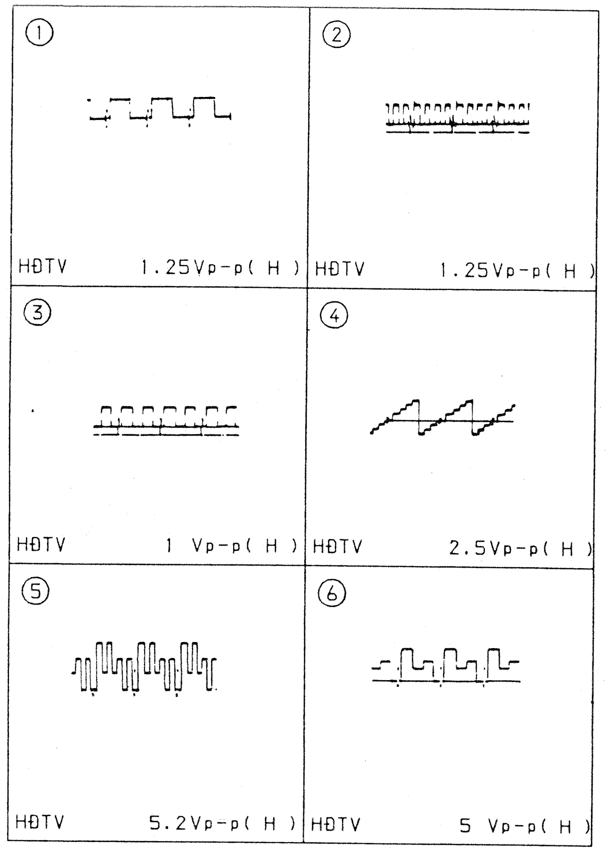
21	22	23	24	25	26	27	28	29	30



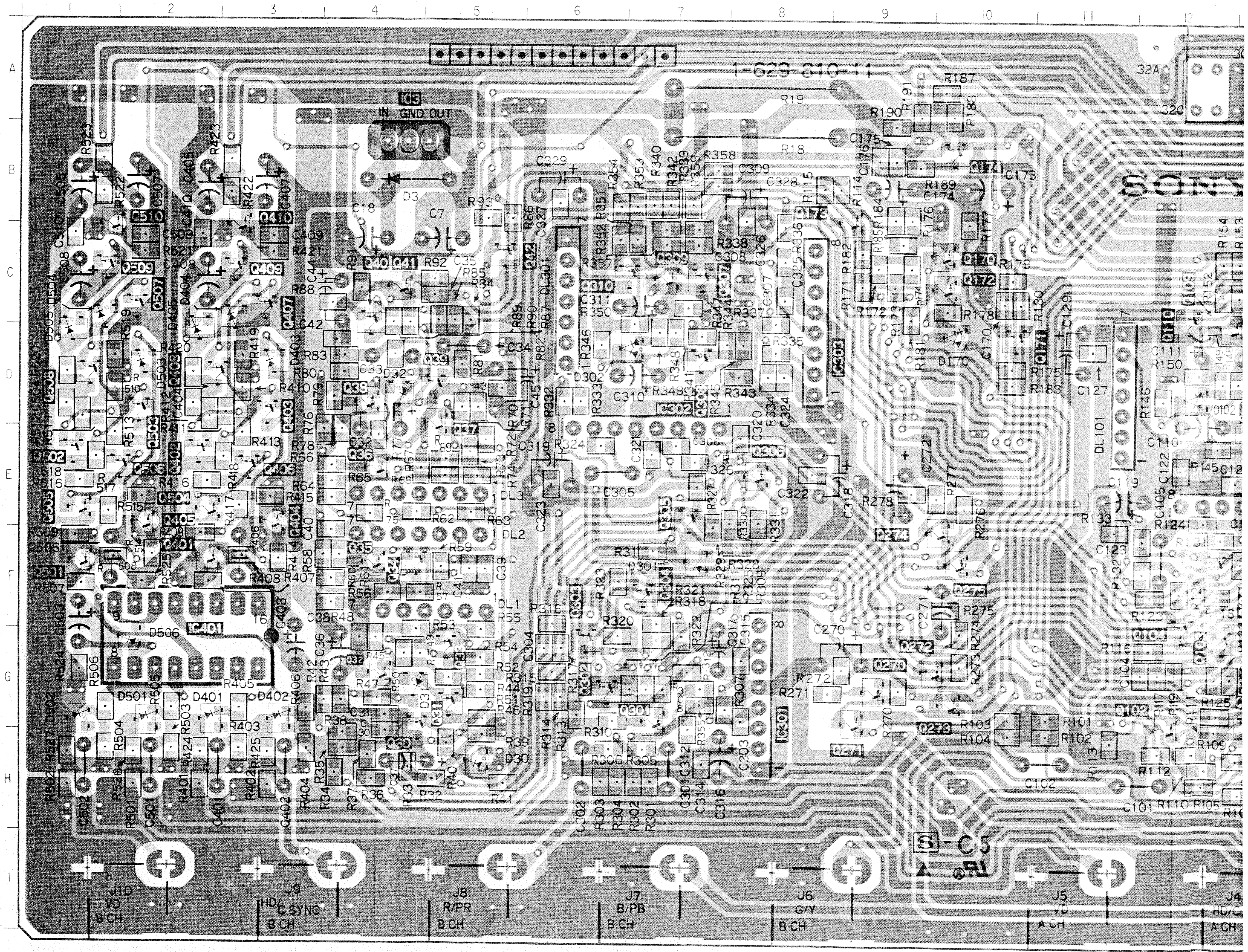
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P

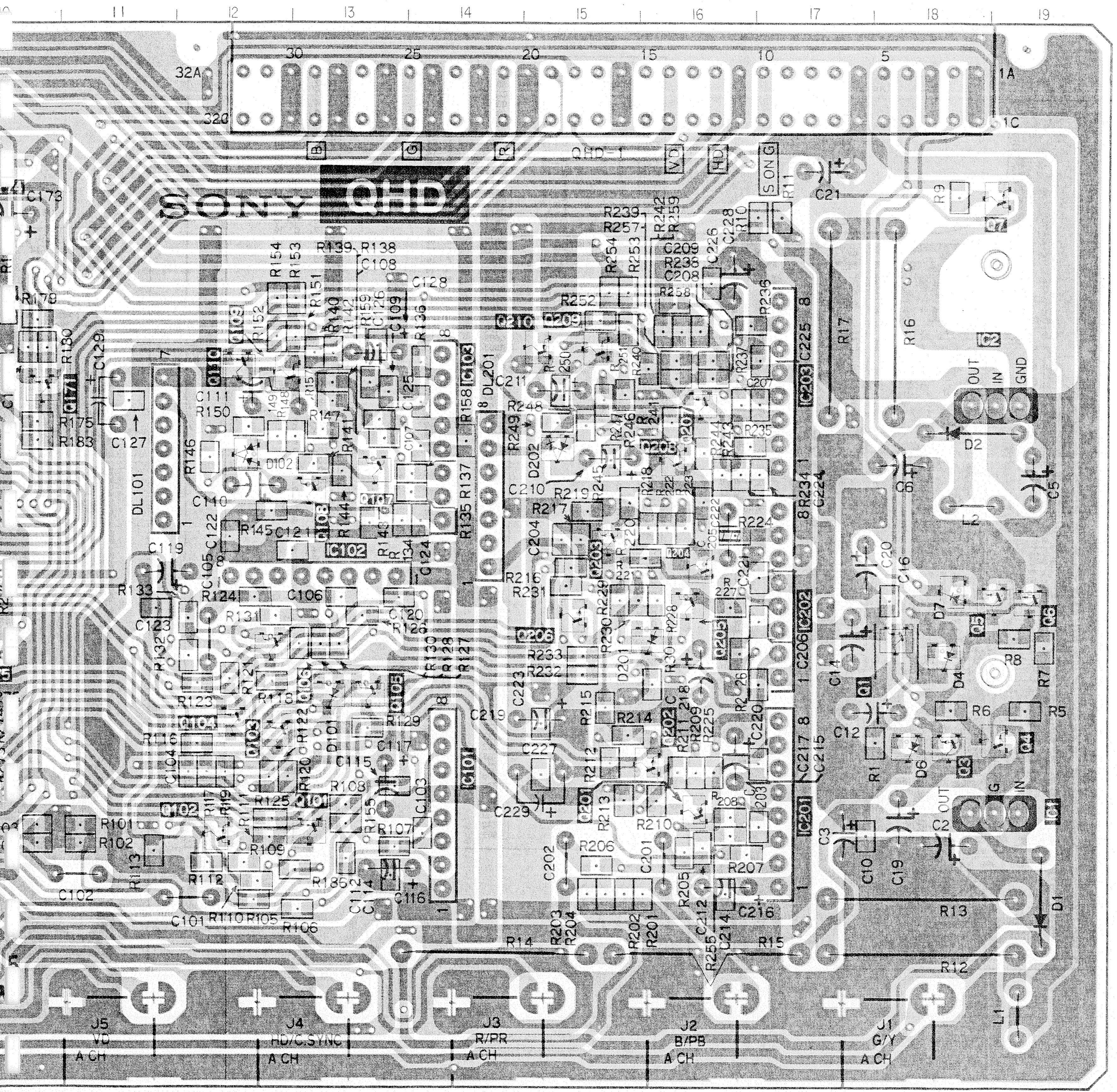
QHD [HDVS DECODER]

QHD BOARD WAVEFORMS



– QHD Board –



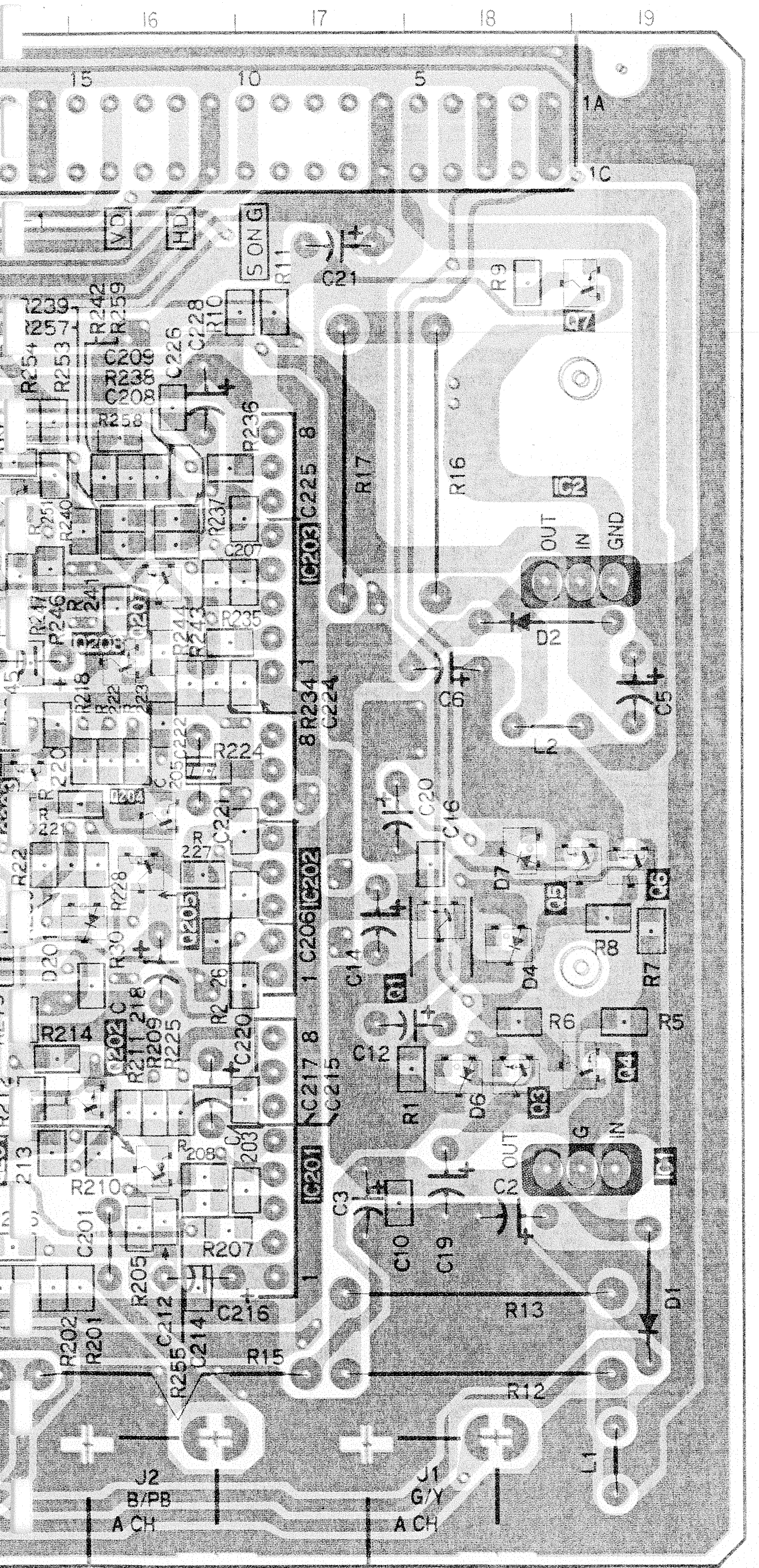


QHD BOARD

IC	
IC1	G – 19
IC2	D – 19
IC3	B – 4
IC101	G – 14
IC102	E – 13
IC103	D – 14
IC201	G – 17
IC202	F – 17
IC203	D – 17
IC301	G – 8
IC302	D – 7
IC303	C – 8
IC401	G – 2

TRANSISTOR	
Q1	F – 18
Q3	G – 18
Q4	G – 19
Q5	E – 19
Q6	E – 19
Q7	B – 19
Q30	H – 4
Q31	G – 5
Q32	G – 4
Q33	G – 5
Q34	F – 4
Q35	F – 4
Q36	E – 4
Q37	D – 5
Q38	D – 4
Q39	D – 5
Q40	C – 4
Q41	C – 4
Q42	C – 5
Q101	G – 13
Q102	G – 12
Q103	G – 12
Q104	F – 12
Q105	F – 13
Q106	F – 12
Q107	D – 13
Q108	D – 13
Q109	C – 12
Q110	C – 12
Q170	C – 10
Q171	D – 10
Q172	C – 10
Q173	B – 9
Q174	B – 10
Q201	G – 16
Q202	G – 16
Q203	E – 15
Q204	E – 16
Q205	F – 16
Q206	F – 15
Q207	D – 16
Q208	D – 16
Q209	C – 15
Q210	C – 15
Q270	G – 9
Q271	G – 9
Q272	G – 10
Q273	G – 10
Q274	F – 10
Q275	F – 10
Q301	G – 7
Q302	G – 6
Q303	G – 6
Q304	F – 7
Q305	E – 7
Q306	E – 8
Q307	C – 7
Q308	D – 7
Q309	C – 7
Q310	C – 7
Q401	F – 2
Q402	E – 2
Q403	D – 3
Q404	E – 3
Q405	E – 2
Q406	E – 3
Q407	C – 3
Q408	D – 2
Q409	C – 3
Q410	C – 3
Q501	F – 1
Q502	E – 1
Q503	D – 2
Q504	E – 2
Q505	E – 1
Q506	E – 2
Q507	C – 2
Q508	D – 1
Q509	C – 1
Q510	C – 1

DIODE	
D1	H – 19
D2	D – 18
D3	B – 4
D4	F – 18
D6	G – 18
D7	E – 18
D30	H – 5
D31	G – 4
D32	D – 4
D101	F – 13
D102	D – 12
D170	D – 10
D201	F – 16
D202	D – 15
D301	F – 7
D302	D – 7
D401	G – 2
D402	G – 3
D403	D – 3
D404	C – 3
D405	D – 2
D501	G – 2
D502	G – 1
D503	D – 2
D504	C – 1
D505	D – 1
D506	G – 2



QHD BOARD

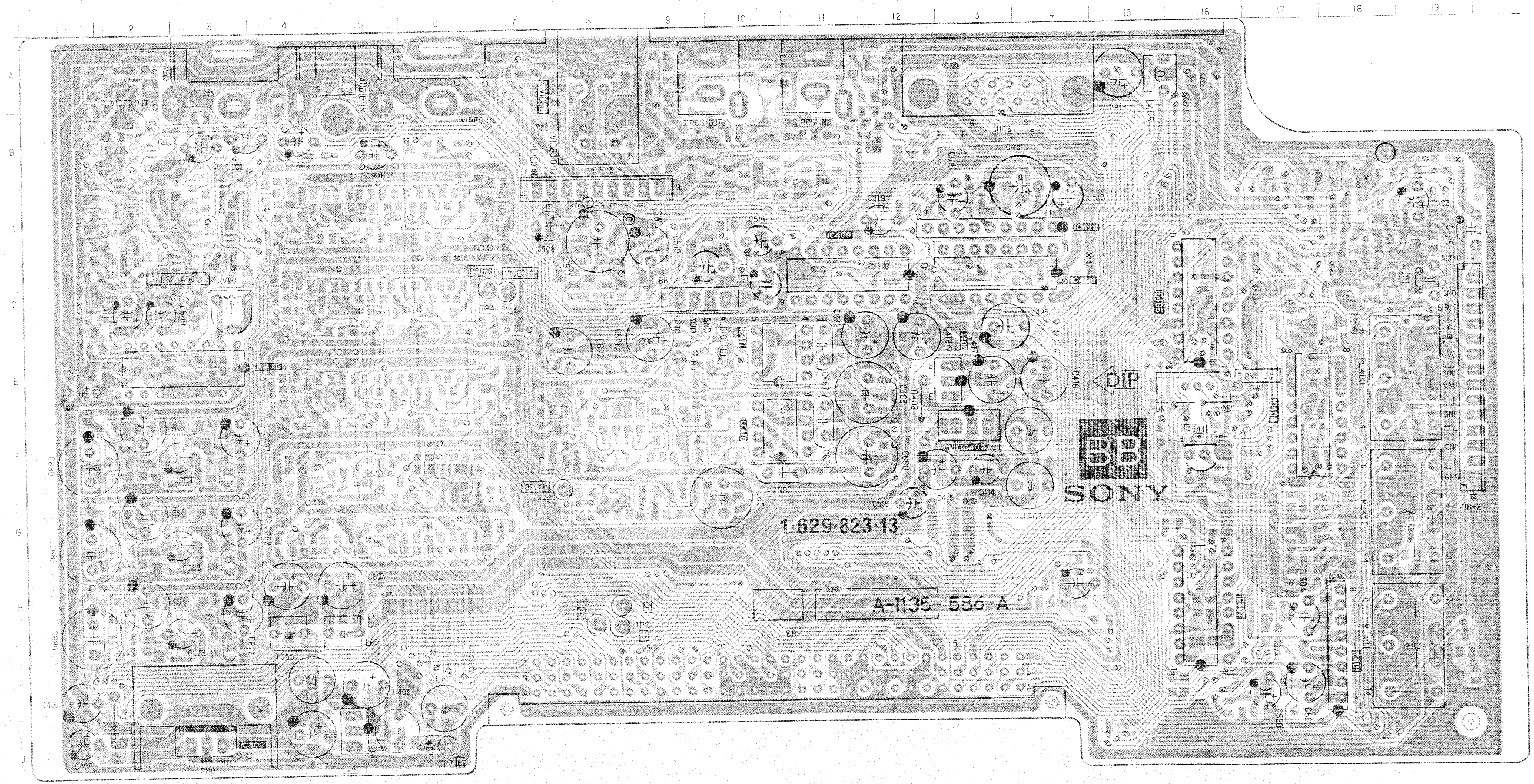
IC	
IC1	G – 19
IC2	D – 19
IC3	B – 4
IC101	G – 14
IC102	E – 13
IC103	D – 14
IC201	G – 17
IC202	F – 17
IC203	D – 17
IC301	G – 8
IC302	D – 7
IC303	C – 8
IC401	G – 2

TRANSISTOR	
Q1	F – 18
Q3	G – 18
Q4	G – 19
Q5	E – 19
Q6	E – 19
Q7	B – 19
Q30	H – 4
Q31	G – 5
Q32	G – 4
Q33	G – 5
Q34	F – 4
Q35	F – 4
Q36	E – 4
Q37	D – 5
Q38	D – 4
Q39	D – 5
Q40	C – 4
Q41	C – 4
Q42	C – 5
Q101	G – 13
Q102	G – 12
Q103	G – 12
Q104	F – 12
Q105	F – 13
Q106	F – 12
Q107	D – 13
Q108	D – 13
Q109	C – 12
Q110	C – 12
Q170	C – 10
Q171	D – 10
Q172	C – 10
Q173	B – 9
Q174	B – 10
Q201	G – 16
Q202	G – 16
Q203	E – 15
Q204	E – 16
Q205	F – 16
Q206	F – 15
Q207	D – 16
Q208	D – 16
Q209	C – 15
Q210	C – 15
Q270	G – 9
Q271	G – 9
Q272	G – 10
Q273	G – 10
Q274	F – 10
Q275	F – 10
Q301	G – 7
Q302	G – 6
Q303	G – 6
Q304	F – 7
Q305	E – 7
Q306	E – 8
Q307	C – 7
Q308	D – 7
Q309	C – 7
Q310	C – 7
Q401	F – 2
Q402	E – 2
Q403	D – 3
Q404	E – 3
Q405	E – 2
Q406	E – 3
Q407	C – 3
Q408	D – 2
Q409	C – 3
Q410	C – 3
Q501	F – 1
Q502	E – 1
Q503	D – 2
Q504	E – 2
Q505	E – 1
Q506	E – 2
Q507	C – 2
Q508	D – 1
Q509	C – 1
Q510	C – 1

DIODE	
D1	H – 19
D2	D – 18
D3	B – 4
D4	F – 18
D6	G – 18
D7	E – 18
D30	H – 5
D31	G – 4
D32	D – 4
D101	F – 13
D102	D – 12
D170	D – 10
D201	F – 16
D202	D – 15
D301	F – 7
D302	D – 7
D401	G – 2
D402	G – 3
D403	D – 3
D404	C – 3
D405	D – 2
D501	G – 2
D502	G – 1
D503	D – 2
D504	C – 1
D505	D – 1
D506	G – 2

BB [SIGNAL SELECT / R.G.B. PRE AMP]

– BB Board – *(Conponent Side)*

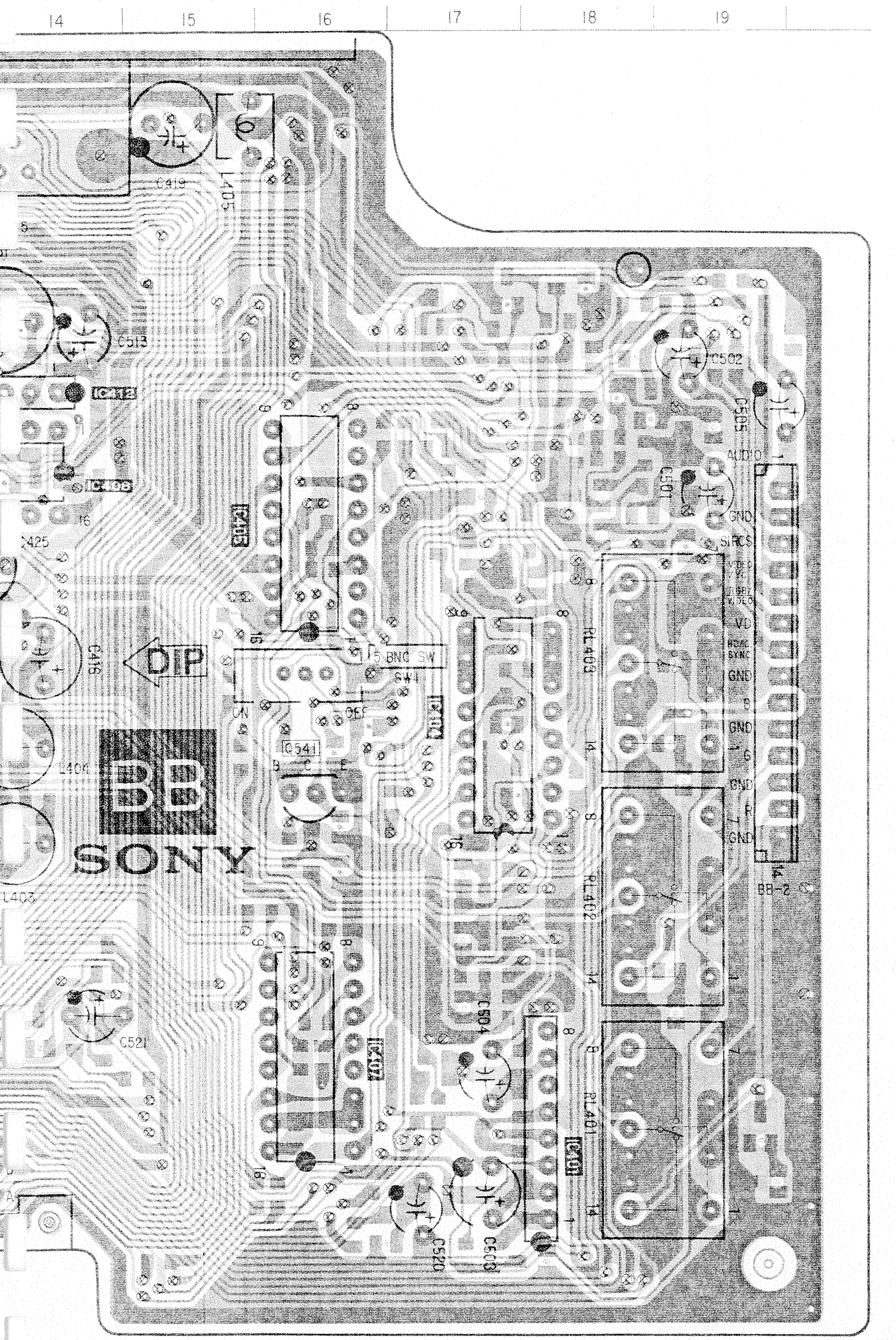


BB BOAR[D]

IC	CONDUCTOR SIDE
IC401	I – 3
IC402	J – 18
IC403	F – 8
IC404	F – 3
IC405	D – 5
IC407	H – 5
IC408	D – 8
IC409	D – 9
IC410	F – 10
IC411	E – 10
IC412	C – 7
IC413	E – 18

TRANSIST[OR]	CONDUCTOR SIDE
Q401	J – 16
Q402	E – 8
Q450	A – 9
Q451	B – 9
Q452	A – 10
Q453	A – 10
Q454	B – 11
Q456	A – 12
Q457	B – 9
Q501	D – 3
Q502	D – 3
Q503	C – 3
Q504	C – 3
Q505	J – 3
Q506	H – 4
Q507	G – 4
Q508	G – 4
Q509	E – 3
Q510	D – 4
Q511	D – 4
Q512	C – 4
Q513	D – [illegible]
Q514	D – [illegible]
Q515	C – [illegible]
Q516	C – [illegible]
Q517	C – [illegible]
Q518	C – [illegible]
Q519	C – [illegible]
Q520	A – [illegible]
Q521	B – [illegible]
Q522	G – [illegible]
Q523	J – [illegible]
Q524	H – [illegible]
Q525	F – [illegible]
Q526	F – [illegible]
Q527	D – [illegible]
Q528	B – [illegible]
Q529	B – [illegible]
Q530	C – [illegible]
Q531	C – [illegible]
Q537	F – [illegible]
Q538	F – [illegible]
Q539	F – [illegible]
Q540	G – [illegible]
Q541	[illegible]
Q542	[illegible]
Q650	F – [illegible]
Q651	F – [illegible]
Q652	G – 14
Q653	G – 15
Q654	G – 14
Q655	G – 15
Q656	G – 15
Q657	F – 15
Q658	F – 16
Q659	F – 16
Q660	G – 15
Q661	G – 16

IAL SELECT
.B. PRE AMP



BB BOARD

IC

	CONDUCTOR SIDE	COMPONENT SIDE
IC401	I – 3	I – 18
IC402	J – 18	J – 3
IC403	F – 8	F – 13
IC404	F – 3	F – 17
IC405	D – 5	D – 16
IC407	H – 5	H – 16
IC408	D – 8	D – 13
IC409	D – 9	D – 11
IC410	F – 10	F – 10
IC411	E – 10	E – 10
IC412	C – 7	C – 13
IC413	E – 18	E – 3

TRANSISTOR

	CONDUCTOR SIDE	COMPONENT SIDE
Q401	J – 16	J – 5
Q402	E – 8	E – 13
Q450	A – 9	
Q451	B – 9	
Q452	A – 10	
Q453	A – 10	
Q454	B – 11	
Q456	A – 12	
Q457	B – 9	
Q501	D – 3	
Q502	D – 3	
Q503	C – 3	
Q504	C – 3	
Q505	J – 3	
Q506	H – 4	
Q507	G – 4	
Q508	G – 4	
Q509	E – 3	
Q510	D – 4	
Q511	D – 4	
Q512	C – 4	
Q513	D – 13	
Q514	D – 12	
Q515	C – 12	
Q516	C – 10	
Q517	C – 11	
Q518	C – 8	
Q519	C – 8	
Q520	A – 13	
Q521	B – 13	
Q522	G – 6	
Q523	J – 4	
Q524	H – 6	
Q525	F – 3	
Q526	F – 3	
Q527	D – 2	
Q528	B – 3	
Q529	B – 3	
Q530	C – 3	
Q531	C – 4	
Q537	F – 4	
Q538	F – 5	
Q539	F – 5	
Q540	G – 5	
Q541	F – 5	F – 16
Q542	E – 7	
Q650	F – 14	
Q651	F – 15	
Q652	G – 14	
Q653	G – 15	
Q654	G – 14	
Q655	G – 15	
Q656	G – 15	
Q657	F – 15	
Q658	F – 16	
Q659	F – 16	
Q660	G – 15	
Q661	G – 16	

	CONDUCTOR SIDE	COMPONENT SIDE
Q663	G – 17	
Q664	G – 16	
Q665	G – 17	
Q666	G – 12	
Q667	G – 11	
Q668	F – 12	
Q669	E – 14	
Q670	E – 14	
Q671	F – 15	
Q672	F – 15	
Q673	E – 15	
Q674	E – 15	
Q675	E – 15	
Q676	E – 16	
Q677	F – 15	
Q678	E – 16	
Q679	E – 16	
Q680	F – 17	
Q681	F – 16	
Q682	H – 18	
Q683	H – 18	
Q684	I – 18	
Q685	I – 19	
Q686	H – 19	
Q687	D – 14	
Q688	D – 14	
Q689	D – 15	
Q690	D – 15	
Q691	D – 14	
Q692	D – 15	
Q693	D – 15	
Q694	D – 16	
Q695	D – 15	
Q696	D – 16	
Q697	D – 16	
Q698	D – 17	
Q699	D – 16	
Q701	G – 18	
Q702	G – 18	
Q703	G – 18	
Q704	G – 19	
Q705	G – 19	
Q706	B – 14	
Q707	C – 14	
Q708	C – 15	
Q709	C – 15	
Q710	C – 15	
Q711	C – 15	
Q712	C – 15	
Q713	C – 16	
Q714	C – 15	
Q715	C – 16	
Q716	C – 16	
Q717	C – 17	
Q718	C – 16	
Q719	F – 18	
Q720	F – 18	
Q721	F – 18	
Q722	F – 19	
Q723	F – 19	
Q724	F – 11	
Q725	F – 11	
Q726	F – 12	
Q727	F – 11	
Q728	F – 12	
Q729	F – 13	
Q730	F – 12	
Q731	E – 13	
Q732	F – 12	
Q733	F – 13	
Q734	E – 12	
Q735	E – 13	
Q736	E – 11	
Q737	E – 11	
Q738	E – 11	
Q739	F – 13	
Q740	E – 12	
Q901	C – 17	

	CONDUCTOR SIDE	COMPONENT SIDE
Q902	C – 17	
Q903	A – 17	
Q904	A – 16	
Q905	A – 19	
Q906	A – 19	
Q907	B – 18	
Q908	B – 19	
Q909	B – 19	
Q910	C – 19	
Q911	C – 18	
Q912	D – 17	
Q913	C – 18	
Q914	D – 18	
Q915	D – 18	
Q916	C – 18	
Q917	C – 19	
Q918	C – 19	
Q919	E – 19	
Q920	E – 19	
Q921	E – 18	
Q922	D – 19	
Q923	D – 19	
Q924	C – 19	

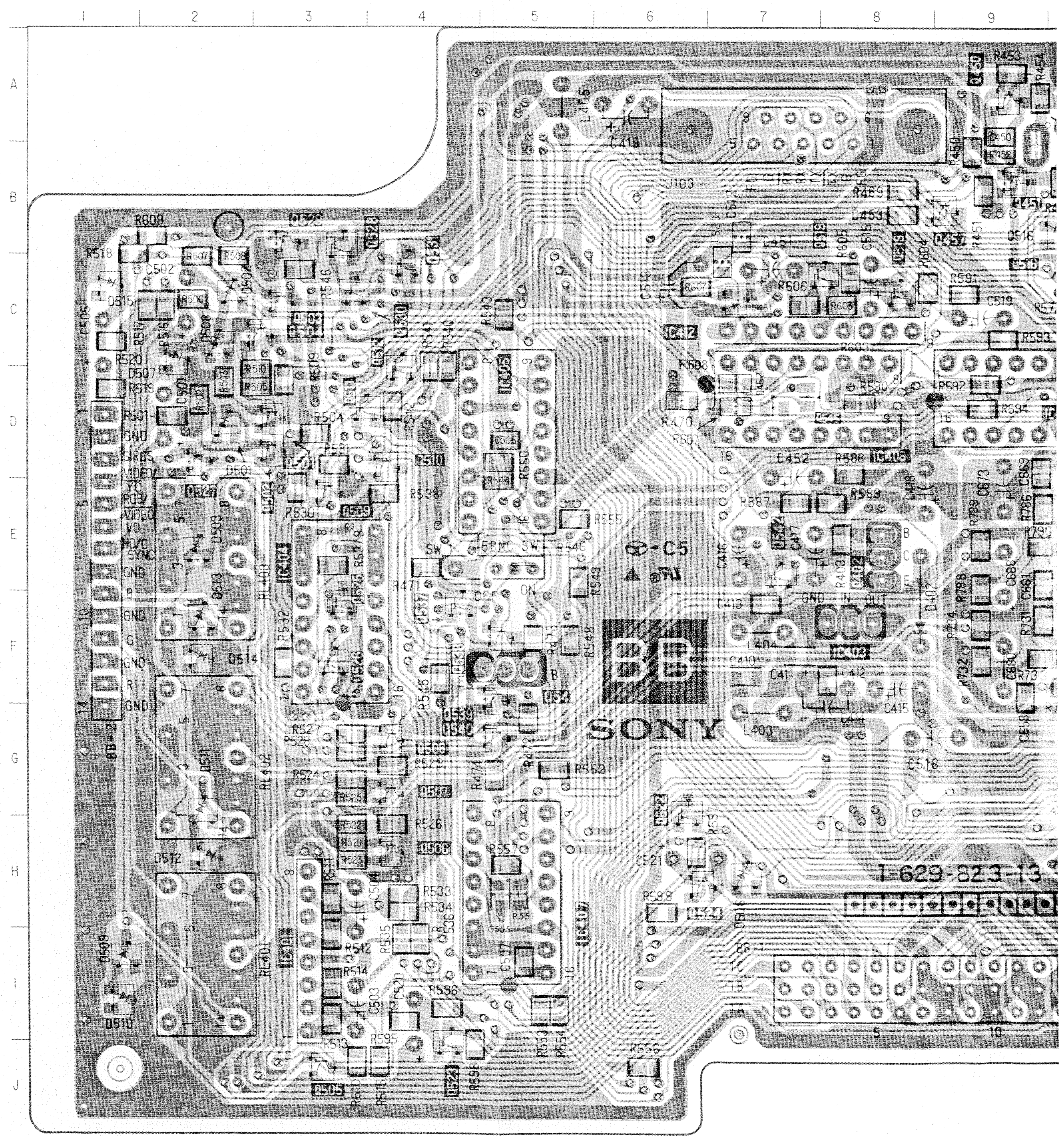
DIODE

	CONDUCTOR SIDE	COMPONENT SIDE
D401	J – 19	
D402	F – 8	F – 12
D450	B – 10	
D451	C – 7	
D452		
D501	D – 2	
D502	C – 2	
D503	E – 2	
D504	C – 11	
D505	D – 11	
D506	H – 7	
D507	C – 2	
D508	C – 2	
D509	I – 1	
D510	I – 1	
D511	G – 2	
D512	H – 2	
D513	F – 2	
D514	F – 2	
D515	C – 1	
D516	B – 10	
D518	B – 10	
D520	B – 11	
D521	B – 12	
D522	C – 13	
D523	D – 13	
D650	G – 12	
D652	B – 15	
D653	B – 15	
D654	I – 18	
D655	G – 18	
D656	F – 18	
D901	B – 18	
D902	A – 19	
D903	B – 18	
D904	C – 18	
D905	D – 18	
D906	C – 18	

VARIABLE RESISTOR

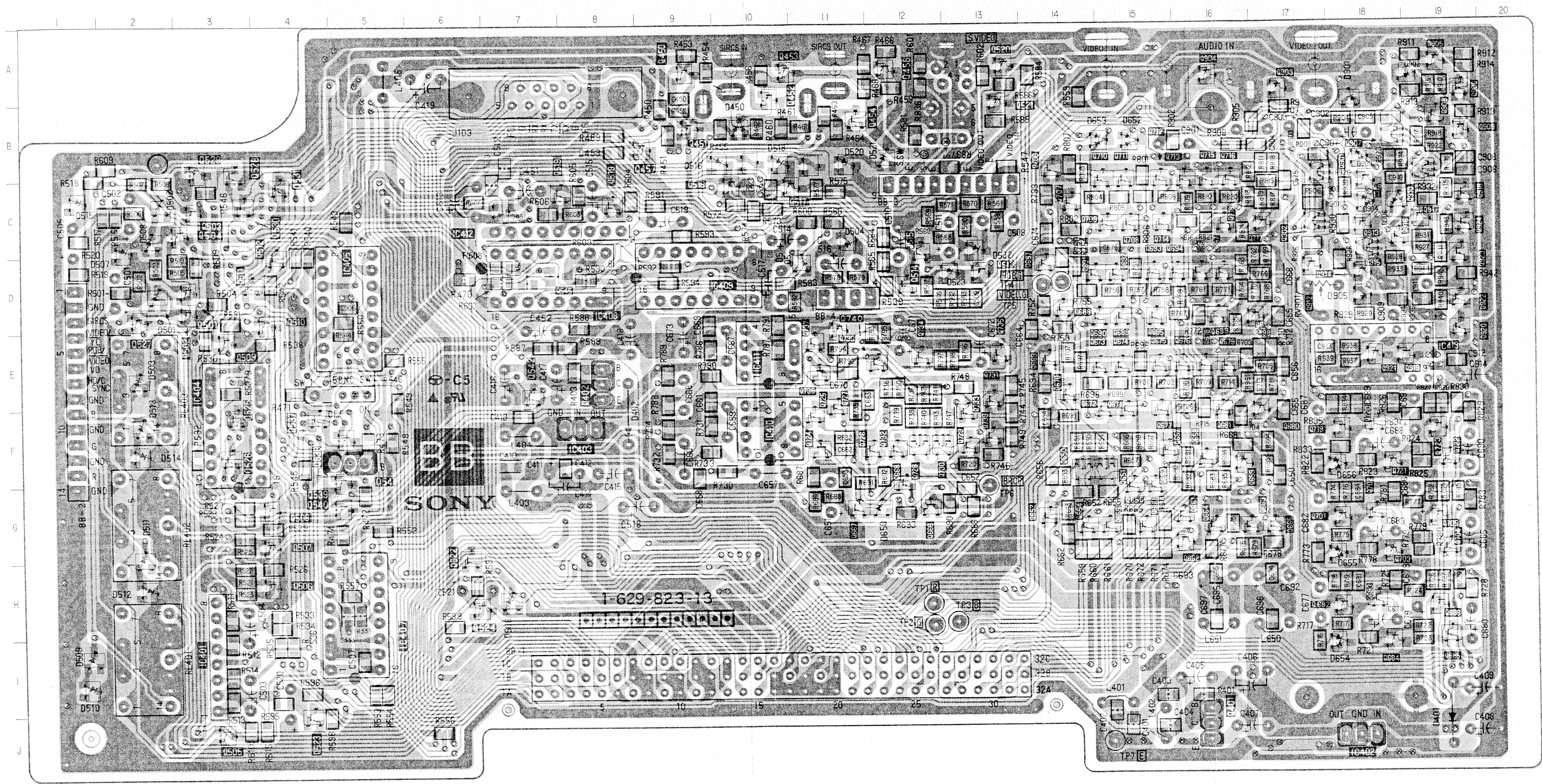
	CONDUCTOR SIDE	COMPONENT SIDE
RV901	D – 17	D – 3

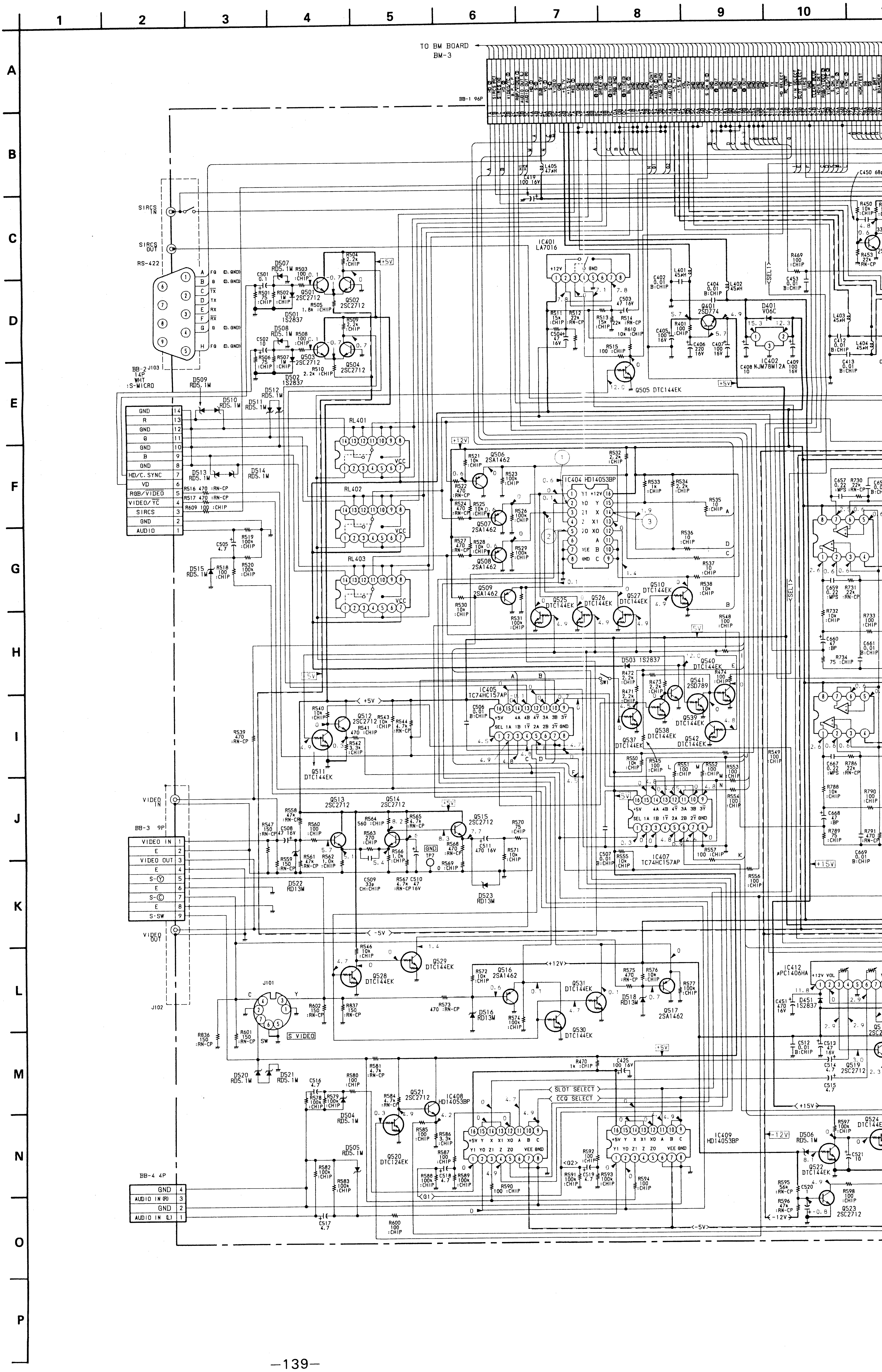
– BB Board – *(Conductor Side)*

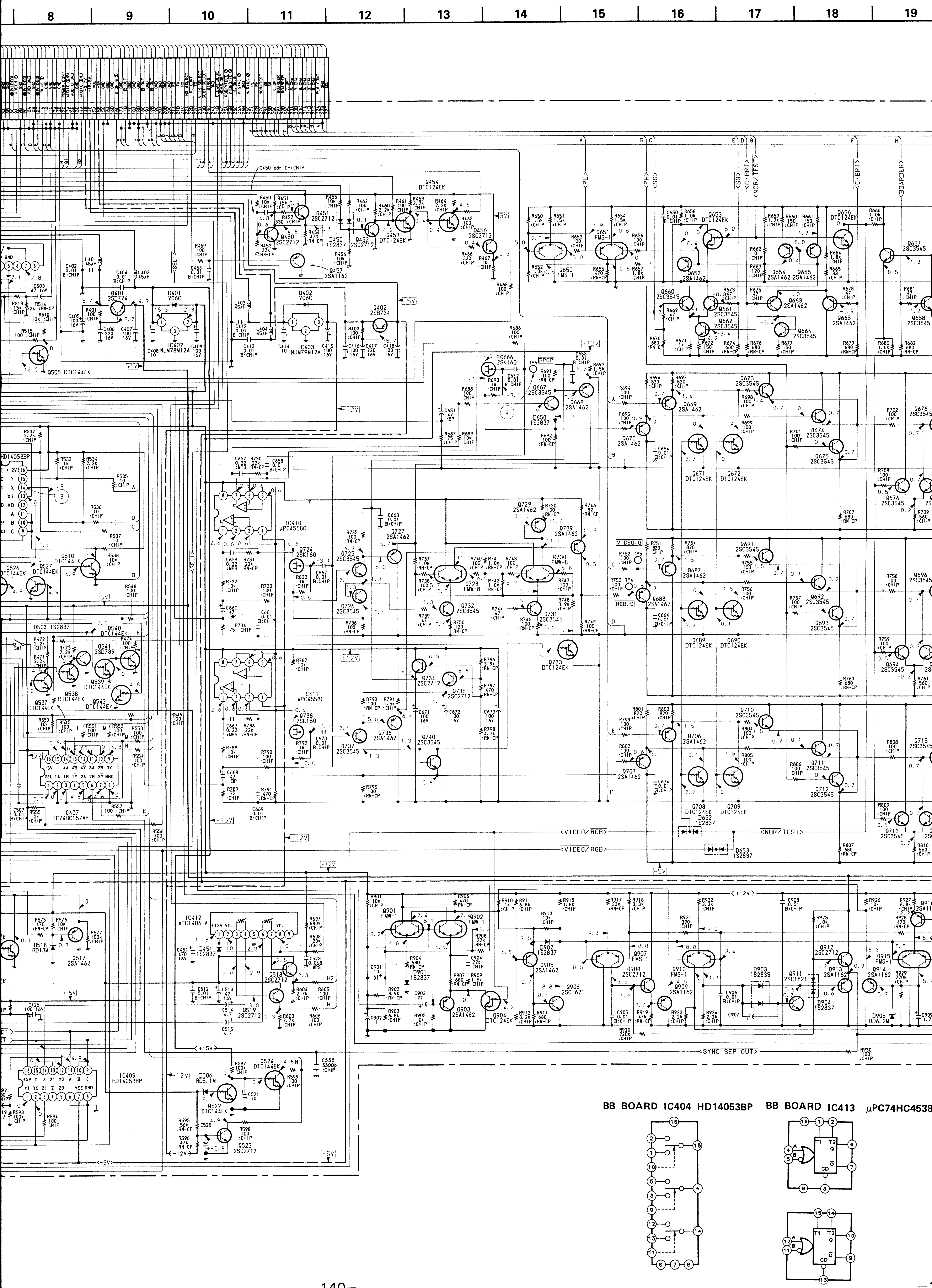


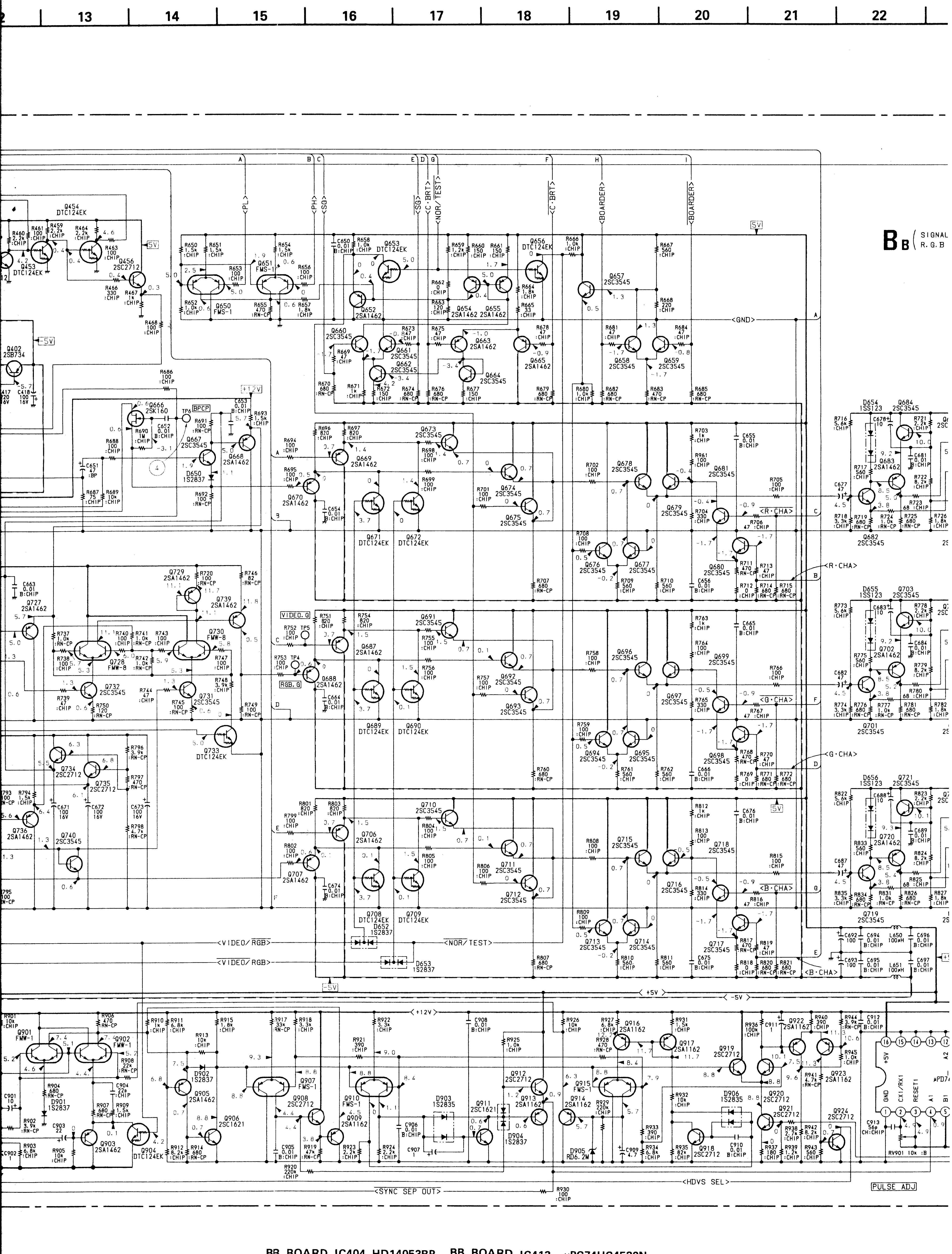
BB [SIGNAL SELECT R.G.B. PRE AMP]

– BB Board – *(Conductor Side)*

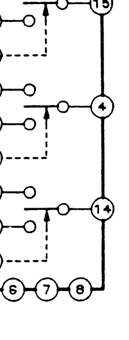




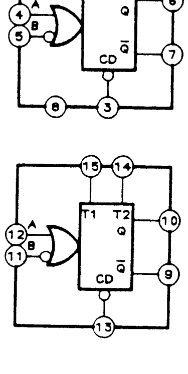

8
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16
17
18
19
BB BOARD IC404 HD14053BP
BB BOARD IC413 µPC74HC4538
IC410 µPC4558C
IC411 µPC4558C
IC412 µPC1406HA
IC407 TC74HC157AP
IC409 HD14053BP
IC402 NJM78M12A
IC403 NJM79M12A
<VIDEO/RGB>
<NOR/TEST>
<SYNC SEP OUT>



BB BOARD IC404 HD14053BP



BB BOARD IC413 μPC74HC4538N

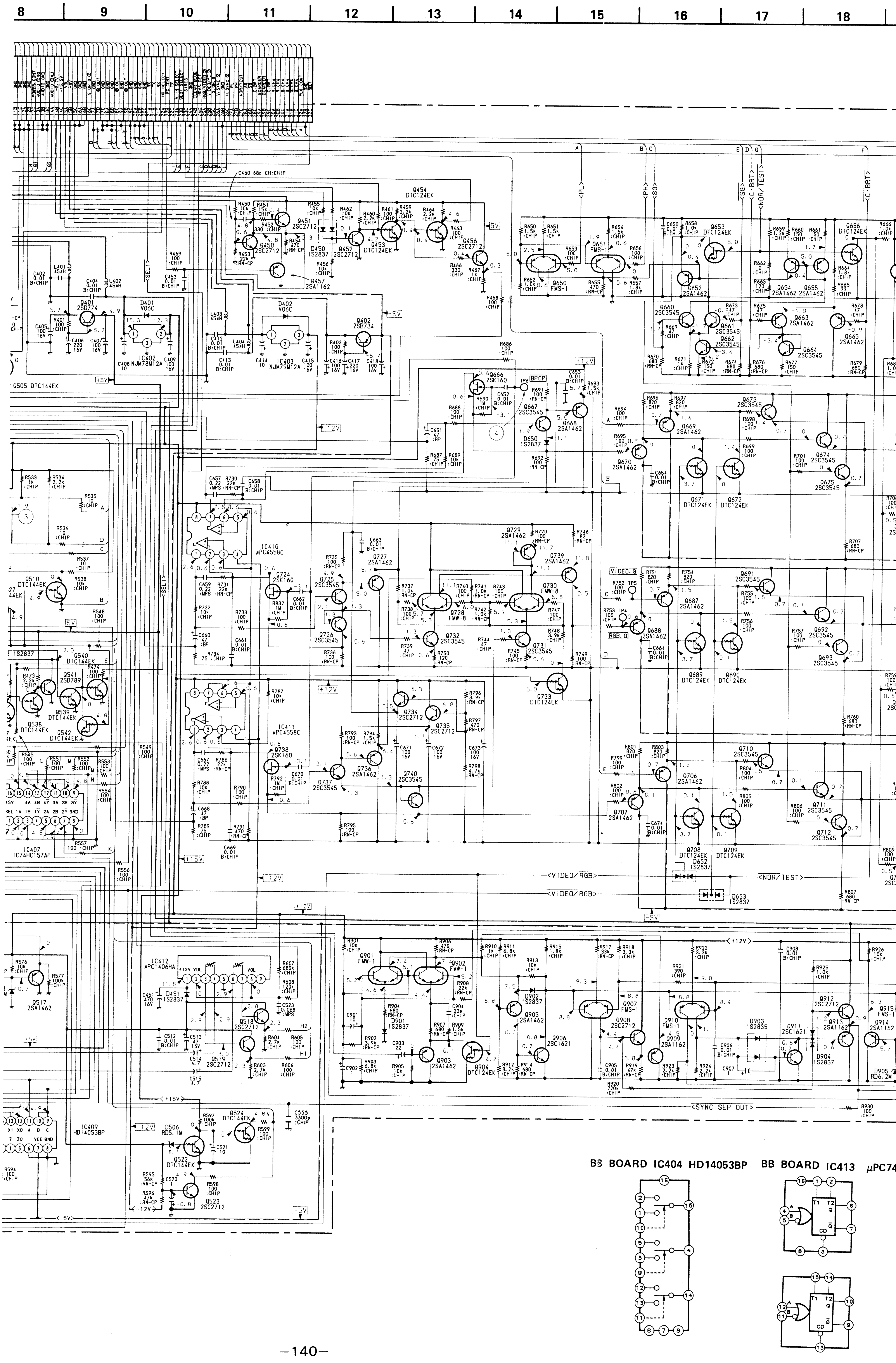


BB BOARD

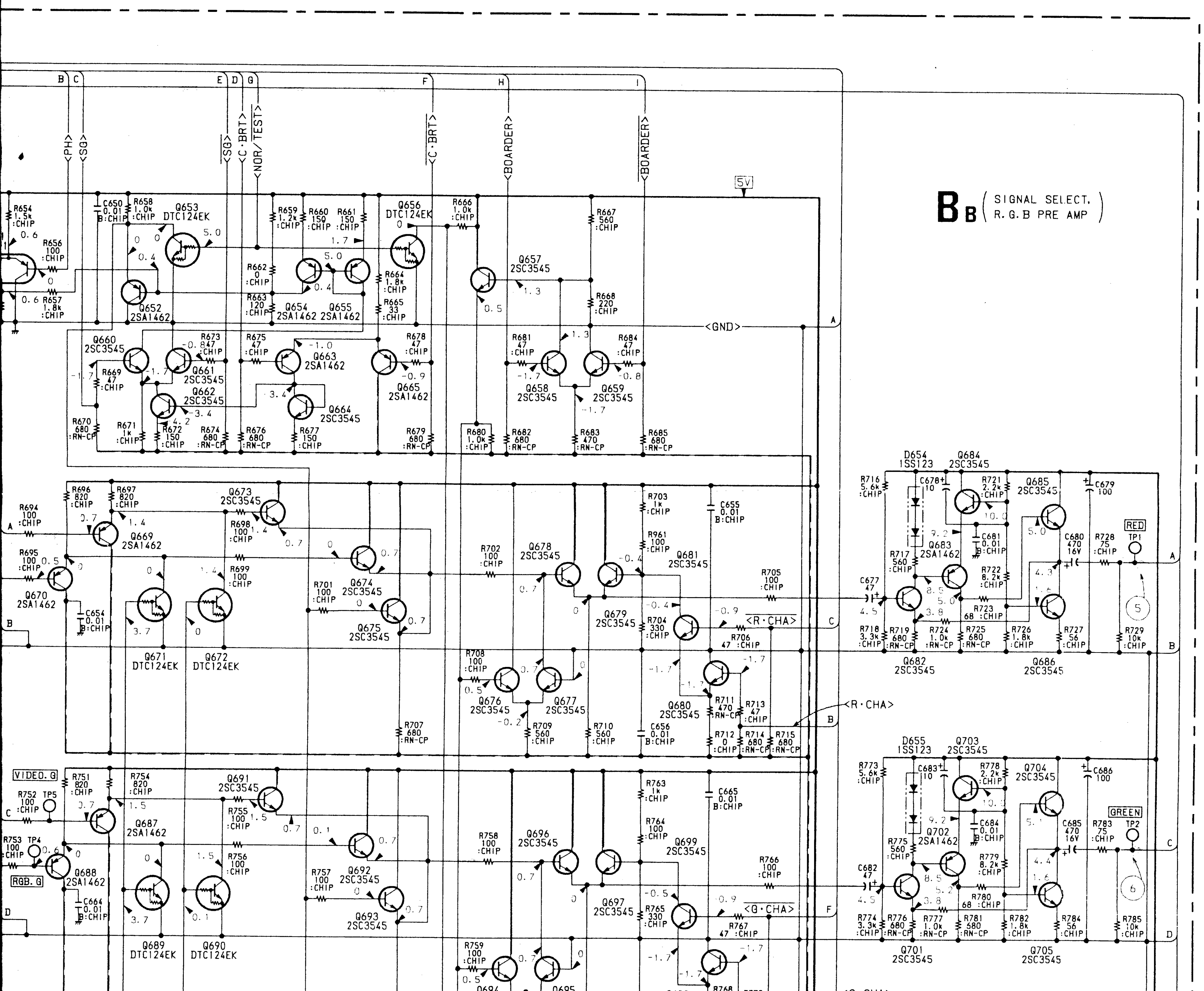
IC	PIN No.	PAL, SECAM, NTSC3.58, NTSC4.43	S-VIDEO
IC404	②	0 V	1.7 V
	④	0.6	1.9
	⑤	0	1.4
	⑫	1.6	0
	⑭	2.1	0.6
	⑮	1.3	2.7
IC408	③	4.6	0
	④	4.6	0
IC409	③	4.6	0

BB BOAF

Q · No.	
Q509	B
Q516	B
	E
Q517	E
Q528	B
	C
Q529	B
	C
Q530	B
	C
Q531	B
	C

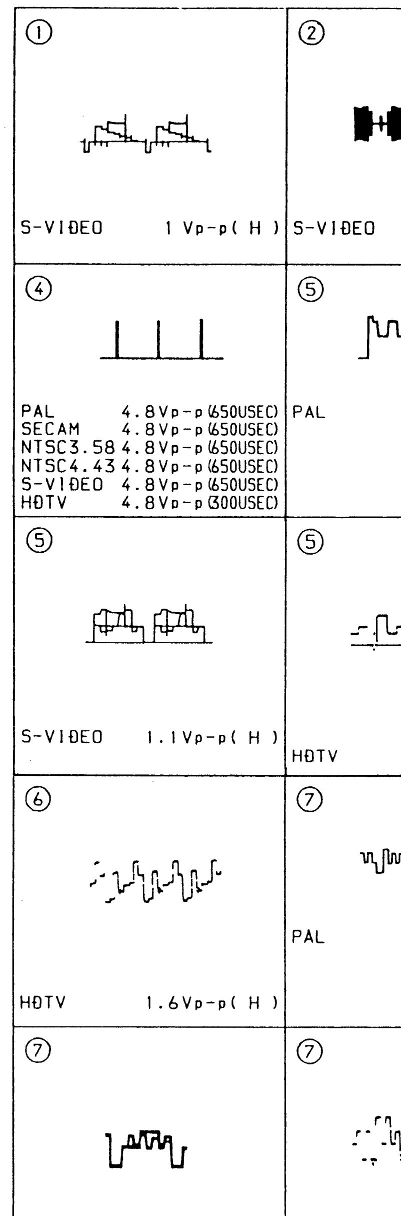

BB BOARD IC404 HD14053BP
BB BOARD IC413 μPC74
IC410 μPC4558C
IC411 μPC4558C
IC412 μPC1406HA
IC402 NJM78M12A
IC403 NJM79M12A
IC407 TC74HC157AP
IC409 HD14053BP
<VIDEO/RGB>
<NOR/TEST>
<SYNC SEP OUT>

16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26

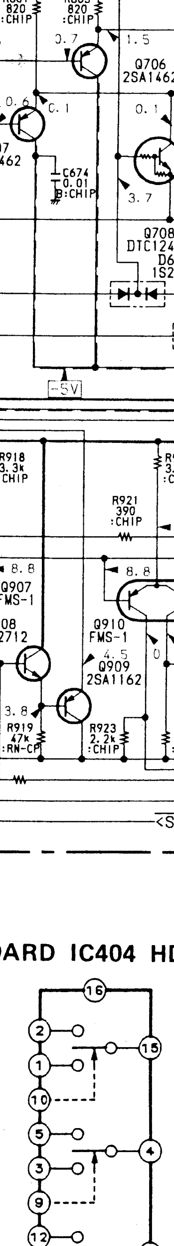


	IC/Q	Part	Function
BB	IC401	LA7016	SYNC G SW-1
	402	NJM78M12A	+12V REG
	403	NJM79M12A	−12V REG
	404	HD14053BP	INPUT SW
	405	TC74HC157AP	SYNC SW-1
	407	TC74HC157AP	SYNC SW-2
	408	HD14053BP	AUDIO SW-1
	409	HD14053BP	AUDIO SW-2
	410	μ PC4558C	REF GEN-1
	411	μ PC4558C	REF GEN-2
	412	μ PC1406HA	AUDIO ATT
	413	MC74HC4538N	SP GEN
	Q401	2SD774	+5V REG
	402	2SB734	−5V REG
	450	2SC2712	SIRCS SW-1
	451	2SC2712	SIRCS SW-2
	452	2SC2712	SIRCS SW-3
	453	DTC124EK	SIRCS SW-4
	454	DTC124EK	SIRCS SW-5
	456	2SC2712	SIRCS SW-6
	457	2SA1162	SIRCS SW-7
	501	2SC2712	HD SW-1
	502	2SC2712	HD SW-2
	503	2SC2712	VD SW-1
	504	2SC2712	VD SW-2
	505	DTC144EK	SYNC G SW-2
	506	2SA1462	R BUFF-1
	507	2SA1462	G BUFF-1
	508	2SA1462	B BUFF-1
	509	2SA1462	VIDEO BUFF-1
	510	DTC144EK	MODE SW-1
	511	DTC144EK	MODE SW-2
	512	2SC2712	MODE SW-3
	513	2SC2712	VIDEO AMP-1
	514	2SC2712	VIDEO AMP-2
	515	2SC2712	VIDEO BUFF-2
	516	2SA1462	Y BUFF-1
	517	2SA1462	C BUFF-1
	518	2SC2712	AUDIO R BUFF-1
	519	2SC2712	AUDIO L BUFF-1
	520	DTC124EK	MODE SW-4
	521	2SC2712	MODE SW-5
	522	DTC144EK	POW CONT-1
	523	2SC2712	POW CONT-2
	524	DTC144EK	POW CONT-3
	525	DTC144EK	MODE SW-6
	526	DTC144EK	MODE SW-7
	527	DTC144EK	MODE SW-8
	528	DTC144EK	MODE SW-9
	529	DTC144EK	MODE SW-10
	530	DTC144EK	MODE SW-11
	531	DTC144EK	MODE SW-12
	537	DTC144EK	MODE SW-13
	538	DTC144EK	MODE SW-14
	539	DTC144EK	MODE SW-15
	540	DTC144EK	MODE SW-16
	541	2SD789	MODE SW-17
	542	DTC144EK	MODE SW-18
	650	FMS1	PL GEN-1
	651	FMS1	PL GEN-2
	652	2SA1462	TEST BUFF-1
	653	DTC124EK	NOR/TEST SW-1
	654	2SA1462	SG SW-1
	655	2SA1462	SG SW-2
	656	DTC124EK	NOR/TEST SW-2
	657	2SC3545	BD SW-1
	658	2SC3545	BD SW-2
	659	2SC3545	BD SW-3
	660	2SC3545	SG SW-3
	661	2SC3545	SG SW-4

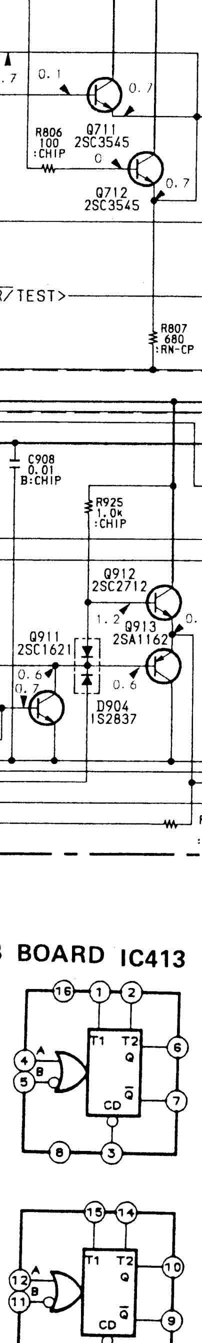
BB BOARD WAVEFORMS



BOARD IC404 HD14053BP



BB BOARD IC413 μPC74HC4538N

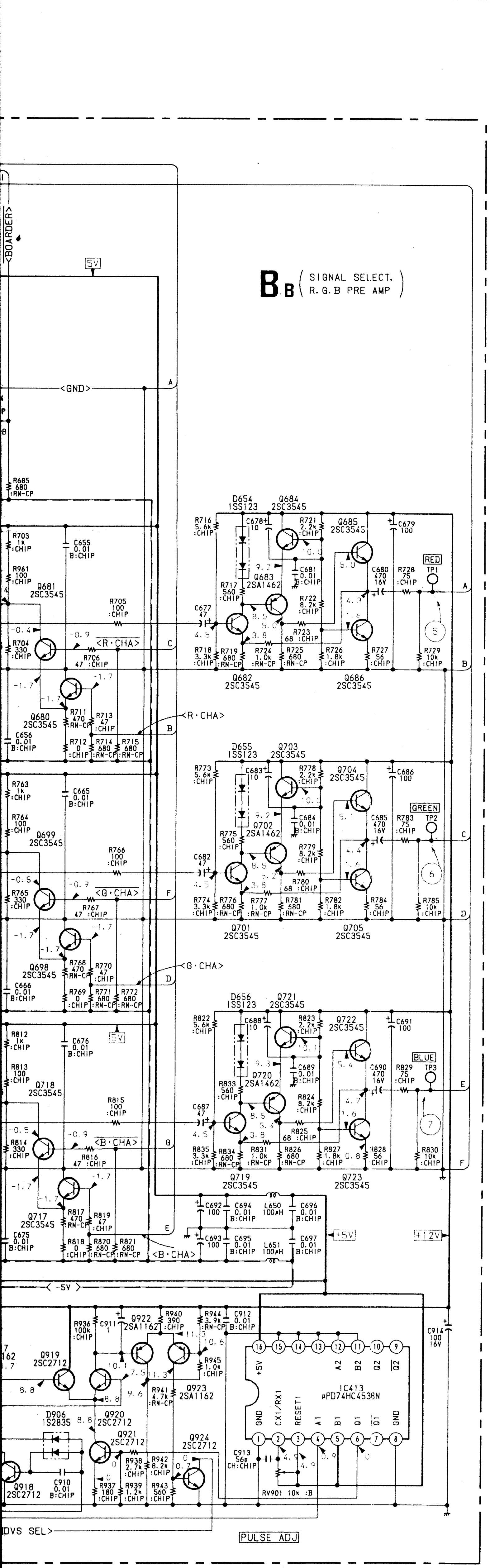


BB BOARD

IC	PIN No.	PAL, SECAM, NTSC3.58, NTSC4.43	S-VIDEO
IC404	②	0 V	1.7 V
	④	0.6	1.9
	⑤	0	1.4
	⑫	1.6	0
	⑭	2.1	0.6
	⑮	1.3	2.7
IC408	③	4.6	0
	④	4.6	0
IC409	③	4.6	0

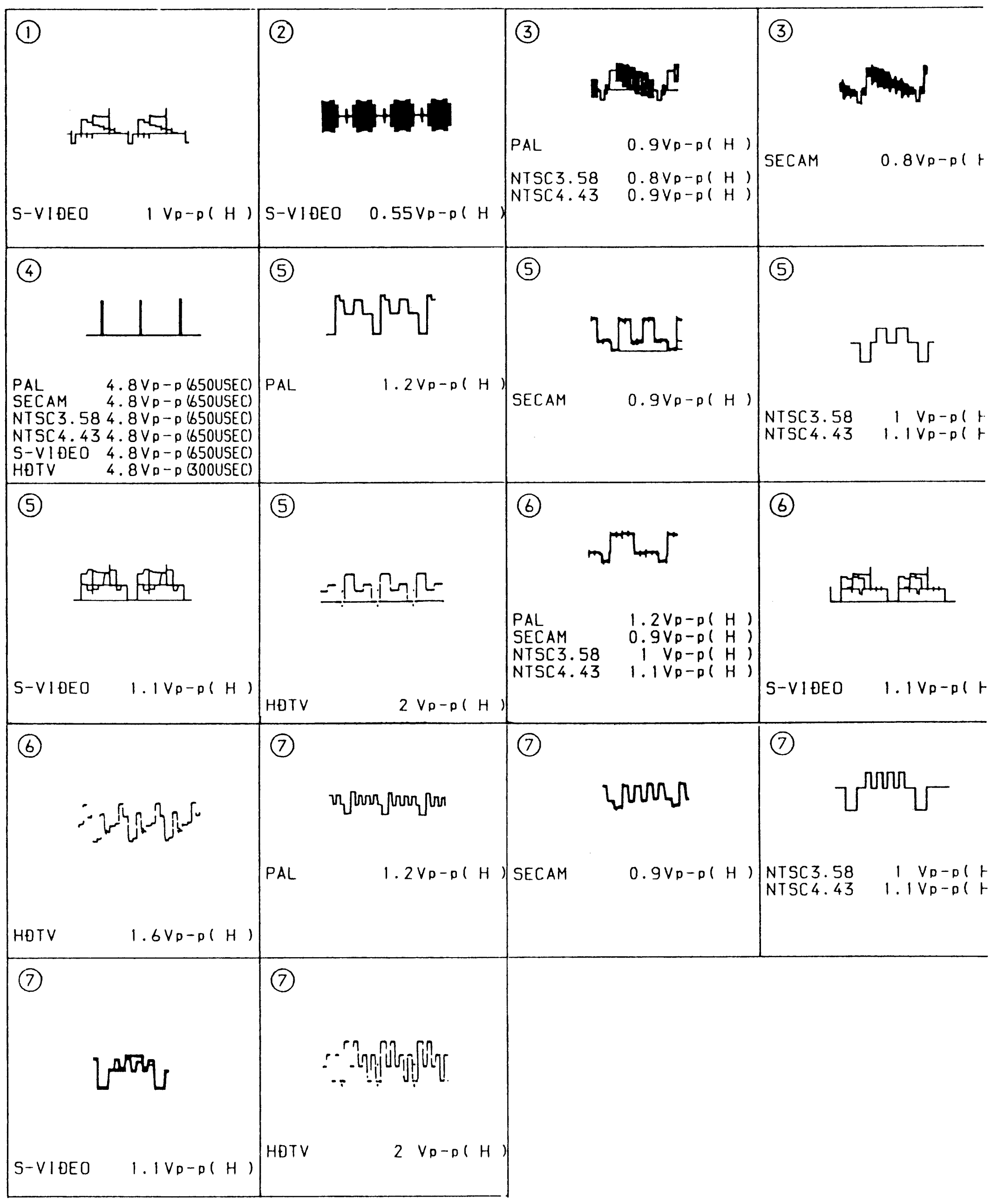
BB BOARD

Q・No.		PAL, SECAM, NTSC3.58, NTSC4.43	S-VIDEO
Q509	B	0.8 V	0.6 V
Q516	B	0.6	0.9
	E	0	1.7
Q517	E	0	1.4
Q528	B	4.9	0
	C	0	4.2
Q529	B	0	4.2
	C	1.6	0
Q530	B	4.9	0
	C	0	1.7
Q531	B	4.9	0
	C	0	1.4



	IC401	LA7016	SYNC G SW-1	662	2SC3545	SG SW-5	734	2SC2712	CB REF BUFF-1
	402	NJM78M12A	+12V REG	663	2SA1462	C BRT SW-1	735	2SC2712	CB REF BUFF-2
	403	NJM79M12A	−12V REG	664	2SC3545	C BRT SW-2	736	2SA1462	B BUFF-5
	404	HD14053BP	INPUT SW	665	2SA1462	C BRT SW-3	737	2SC2545	B BUFF-6
	405	TC74HC157AP	SYNC SW-1	666	2SK160	R CLAMP	738	2SK160	B CLAMP
	407	TC74HC157AP	SYNC SW-2	667	2SC3545	R BUFF-2	739	2SA1462	G BUFF-7
	408	HD14053BP	AUDIO SW-1	668	2SA1462	R BUFF-3	740	2SC3545	LEVEL SHIFT
	409	HD14053BP	AUDIO SW-2	669	2SA1462	VIDEO R BUFF-1	901	FMW1-98	S on G AMP-1
	410	μ PC4558C	REF GEN-1	670	2SA1462	R BUFF-4	902	FMW1-98	S on G AMP-2
	411	μ PC4558C	REF GEN-2	671	DTC124EK	SIG SW-1	903	2SA1462	S on G BUFF-1
	412	μ PC1406HA	AUDIO ATT	672	DTC124EK	SIG SW-2	904	DTC124EK	V/RGB SW
	413	MC74HC4538N	SP GEN	673	2SC3545	VIDEO R BUFF-2	905	2SA1462	S on G AMP-3
				674	2SC3545	R BUFF-5	906	2SC1621	S on G AMP-4
	Q401	2SD774	+5V REG	675	2SC3545	TEST BUFF-1	907	FMS1-98	S on G SYNC SE
	402	2SB734	−5V REG	676	2SC3545	BD SW-4	908	2SC2712	S on G SYNC SE
	450	2SC2712	SIRCS SW-1	677	2SC3545	BD SW-5	909	2SA1162	S on G SYNC SE
	451	2SC2712	SIRCS SW-2	678	2SC3545	R BUFF-6	910	FMS1-98	S on G SYNC SE
	452	2SC2712	SIRCS SW-3	679	2SC3545	R.CHA BUFF-1	911	2SC1621	S on G SYNC SE
	453	DTC124EK	SIRCS SW-4	680	2SC3545	R.CHA SW-1	912	2SC2712	SYNC BUFF-1
	454	DTC124EK	SIRCS SW-5	681	2SC3545	R.CHA SW-2	913	2SA1162	SYNC BUFF-2
	456	2SC2712	SIRCS SW-6	682	2SC3545	R.AMP-1	914	2SA1162	S on G AMP-5
	457	2SA1162	SIRCS SW-7	683	2SA1462	R.AMP-2	915	FMS1-98	S on G AMP-6
	501	2SC2712	HD SW-1	684	2SC3545	R.AMP-3	916	2SA1162	S on G AMP-7
	502	2SC2712	HD SW-2	685	2SC3545	R.AMP-4	917	2SA1162	S on G AMP-8
	503	2SC2712	VD SW-1	686	2SC3545	R.AMP-5	918	2SC2712	S on G AMP-9
	504	2SC2712	VD SW-2	687	2SA1462	VIDEO G BUFF-1	919	2SC2712	TS DET-1
	505	DTC144EK	SYNC G SW-2	688	2SA1462	G BUFF-2	920	2SC2712	TS DET-2
	506	2SA1462	R BUFF-1	689	DTC124EK	SIG SW-3	921	2SC2712	TS DET-3
	507	2SA1462	G BUFF-1	690	DTC124EK	SIG SW-4	922	2SA1162	TS DET-4
	508	2SA1462	B BUFF-1	691	2SC3545	VIDEO G BUFF-2	923	2SA1162	TS DET-5
	509	2SA1462	VIDEO BUFF-1	692	2SC3545	G BUFF-3	924	2SC2712	TS DET-6
	510	DTC144EK	MODE SW-1	693	2SC3545	TEST BUFF-2			
	511	DTC144EK	MODE SW-2	694	2SC3545	BD SW-6	D401	V06C	+12V PROT
	512	2SC2712	MODE SW-3	695	2SC3545	BD SW-7	402	V06C	−12V PROT
	513	2SC2712	VIDEO AMP-1	696	2SC3545	G BUFF-4	450	1S2837	SIRCS OR
BB	514	2SC2712	VIDEO AMP-2	697	2SC3545	G.CHA BUFF-1	451	1S2837	AUDIO PROT-1
	515	2SC2712	VIDEO BUFF-2	698	2SC3545	G.CHA SW-1	452		
	516	2SA1462	Y BUFF-1	699	2SC3545	G.CHA SW-2	501	1S2837	HD CLAMP
	517	2SA1462	C BUFF-1	701	2SC3545	G.AMP-1	502	1S2837	VD CLAMP
	518	2SC2712	AUDIO R BUFF-1	702	2SA1462	G.AMP-2	503	1S2837	MODE SW-1
	519	2SC2712	AUDIO L BUFF-1	703	2SC3545	G.AMP-3	504	RD5.1M-B2	AUDIO PROT-2
	520	DTC124EK	MODE SW-4	704	2SC3545	G.AMP-4	505	RD5.1M-B2	AUDIO PROT-3
	521	2SC2712	MODE SW-5	705	2SC3545	G.AMP-5	506	RD5.1M-B2	POW CONT
	522	DTC144EK	POW CONT-1	706	2SA1462	VIDEO B BUFF-1	507	RD5.1MB2	HD PROT
	523	2SC2712	POW CONT-2	707	2SA1462	B BUFF-2	508	RD5.1MB2	VD PROT
	524	DTC144EK	POW CONT-3	708	DTC124EK	SIG SW-2	509	RD5.1MB2	R PROT-1
	525	DTC144EK	MODE SW-6	709	DTC124EK	SIG SW-6	510	RD5.1MB2	R PROT-2
	526	DTC144EK	MODE SW-7	710	2SC3545	VIDEO B BUFF-2	511	RD5.1MB2	G PROT-1
	527	DTC144EK	MODE SW-8	711	2SC3545	B BUFF-3	512	RD5.1MB2	G PROT-2
	528	DTC144EK	MODE SW-9	712	2SC3545	TEST BUFF-3	513	RD5.1MB2	B PROT-1
	529	DTC144EK	MODE SW-10	713	2SC3545	BD SW-8	514	RD5.1MB2	B PROT-2
	530	DTC144EK	MODE SW-11	714	2SC3545	BD SW-9	515	RD5.1MB2	AUDIO PROT-4
	531	DTC144EK	MODE SW-12	715	2SC3545	B BUFF-4	516	RD13MB2	Y PROT
	537	DTC144EK	MODE SW-13	716	2SC3545	B.CHA BUFF-1	518	RD13MB2	C PROT
	538	DTC144EK	MODE SW-14	717	2SC3545	B.CHA SW-1	520	RD5.1MB2	S SW PROT-1
	539	DTC144EK	MODE SW-15	718	2SC3545	B.CHA SW-2	521	RD5.1MB2	S SW PROT-2
	540	DTC144EK	MODE SW-16	719	2SC3545	B AMP-1	522	RD13MB2	VIDEO PROT-1
	541	2SD789	MODE SW-17	720	2SA1462	B AMP-2	523	RD13MB2	VIDEO PROT-2
	542	DTC144EK	MODE SW-18	721	2SC3545	B AMP-3	650	1S2837	LEVEL SHIFT
	650	FMS1	PL GEN-1	722	2SC3545	B AMP-4	652	1S2837	MODE SW-2
	651	FMS1	PL GEN-2	723	2SC3545	B AMP-5	653	1S2837	MODE SW-3
	652	2SA1462	TEST BUFF-1	724	2SK160	G CLAMP	654	1SS123	R BIAS
	653	DTC124EK	NOR/TEST SW-1	725	2SC3545	G BUFF-5	655	1SS123	G BIAS
	654	2SA1462	SG SW-1	726	2SC3545	LEVEL SHIFT-1	656	1SS123	B BIAS
	655	2SA1462	SG SW-2	727	2SA1462	G BUFF-6	901	1S2837	S on G AMP-1
	656	DTC124EK	NOR/TEST SW-2	728	FMW-8	CB SW-1	902	1S2837	S on G AMP-2
	657	2SC3545	BD SW-1	729	2SA1462	CB SW-2	903	1S2835	S on G AMP-3
	658	2SC3545	BD SW-2	730	FMW-8	CB SW-3	904	1S2837	S on G AMP-4
	659	2SC3545	BD SW-3	731	2SC3545	CB SW-4	905	RD6.2MB1	S on G AMP-5
	660	2SC3545	SG SW-3	732	2SC3545	CB SW-5	906	1S2835	S on G AMP-6
	661	2SC3545	SG SW-4	733	DTC124EK	CB ON/OFF SW-1			

BB BOARD WAVEFORMS



ARD

PIN No.	PAL, SECAM, NTSC3.58, NTSC4.43	S-VIDEO
②	0 V	1.7 V
④	0.6	1.9
⑤	0	1.4
⑫	1.6	0
⑭	2.1	0.6
⑮	1.3	2.7
③	4.6	0
④	4.6	0
③	4.6	0

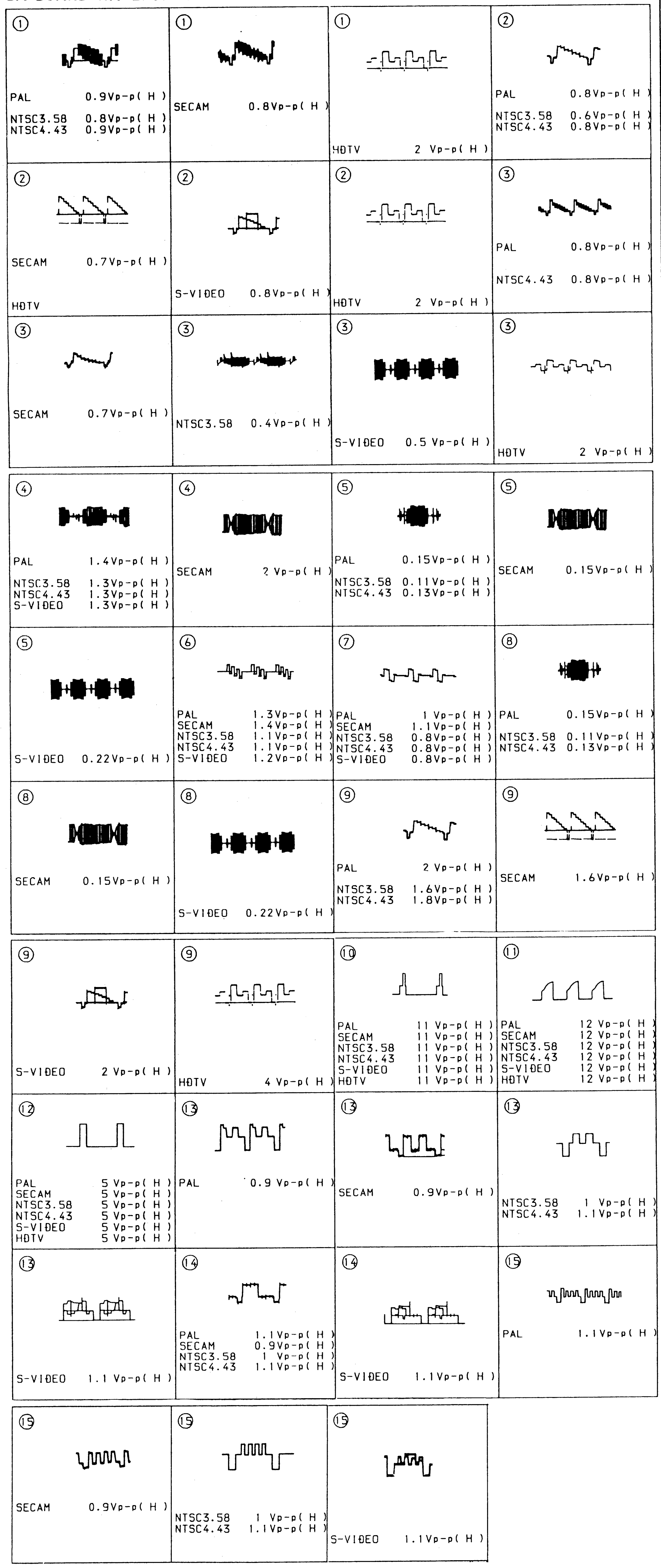
BB BOARD

Q · No.		PAL, SECAM, NTSC3.58, NTSC4.43	S-VIDEO
Q509	B	0.8 V	0.6 V
Q516	B	0.6	0.9
	E	0	1.7
Q517	E	0	1.4
Q528	B	4.9	0
	C	0	4.2
Q529	B	0	4.2
	C	1.6	0
Q530	B	4.9	0
	C	0	1.7
Q531	B	4.9	0
	C	0	1.4

1 2 3 4 5 6 7 8 9 10

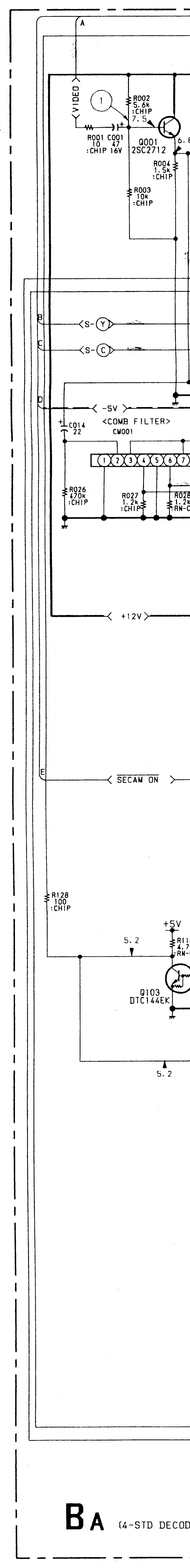
A B C D E F G H I J K L M N O P

BA BOARD WAVEFORMS



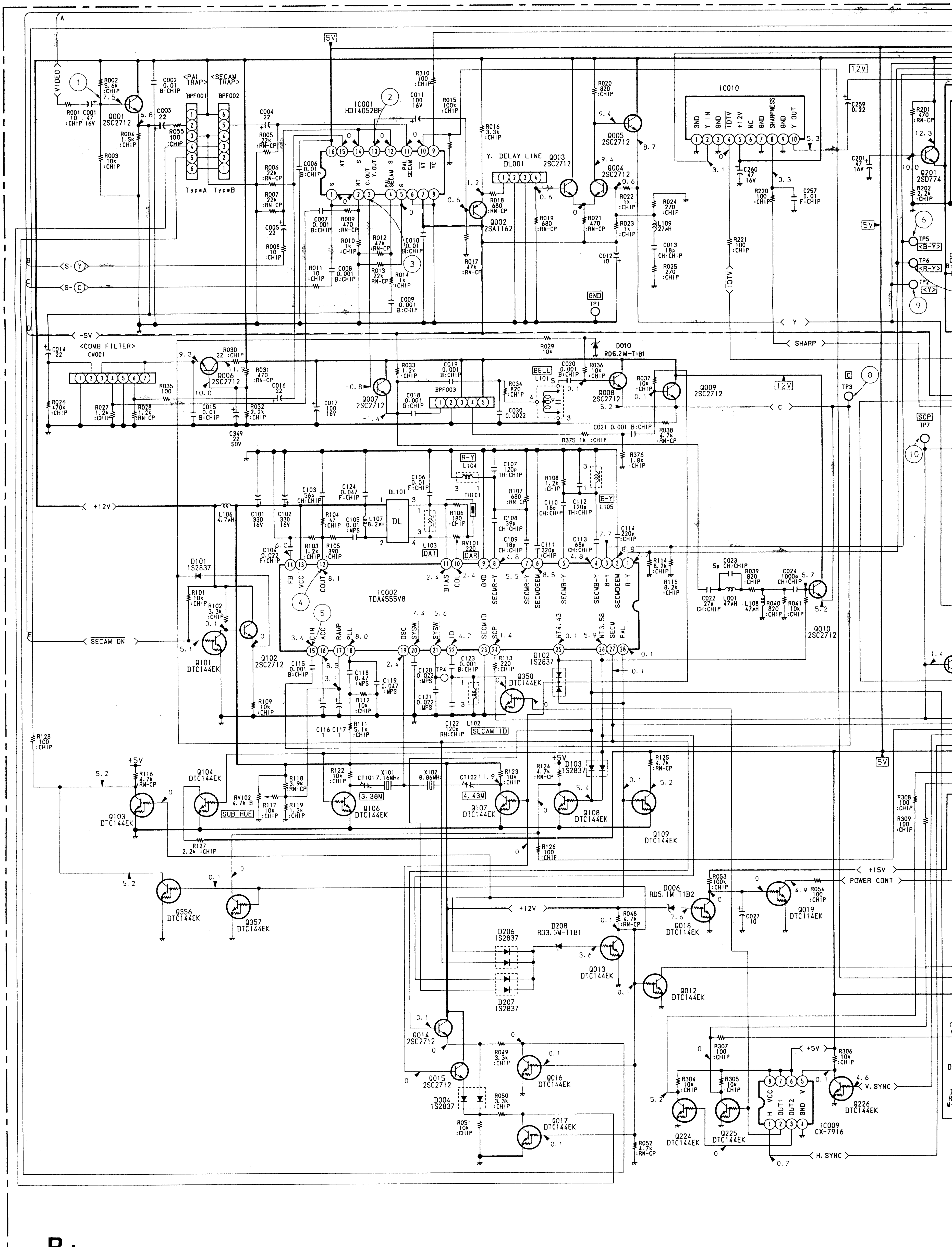
BA

IC1	HD14052BP	SYSTEM SW
2	TDA4555-VB	DECORDER
3	CXA1216P	MATRIX
4	TDA2595	JUNGLE
5	HD14053BP	IDTV SW-1
6	TC74HC157AP	IDTV SW-2
7	TC74HC27AP	IDTV SW-3
8	NJM78M12A	12V REG
9	CX-7916	50/60 DET
10	SNY-9202	SHARPNESS
12	μ PC4558C	LEVEL SHIFT
Q1	2SC2712	VIDEO BUFF
2	2SA1162	Y BUFF-1
3	2SA2712	Y AMP-1
4	2SA2712	Y AMP-2
5	2SA2712	Y AMP-3
6	2SC2712	9V REG-1
7	2SC2712	C BUFF
8	2SC2712	SECAM C BUFF
9	2SC2712	PAL C BUFF
10	2SC2712	NTSC C BUFF
12	DTC144EK	W/B SW-1
13	DTC144EK	W/B SW-2
14	2SC2712	NT3.58 SW
15	2SC2712	NT4.43 SW
16	DTC144EK	TRAP SW-1
17	DTC144EK	TRAP SW-2
18	DTC114EK	POW CONT-1
19	DTC114EK	POW CONT-2
101	DTC144EK	SECAM SW-1
102	2SC2712	SECAM SW-2
103	DTC144EK	MODE SW-1
104	DTC144EK	MODE SW-2
106	DTC144EK	NT OSC SW
107	DTC144EK	PAL OSC SW
108	DTC144EK	MODE SW-3
109	DTC144EK	MODE SW-4
201	2SD774	9V REG-2
202	2SA1162	B-Y BUFF-1
203	2SA1162	R-Y BUFF-1
204	2SA1162	AFC-1
205	2SC2712	AFC-2
206	2SC2712	SYNC BUFF
207	2SC2712	V.SYNC SW-1
208	2SC2712	V.SYNC SW-2
209	2SC2712	V.SYNC SW-3
210	2SA1162	V.SYNC SW-4
211	2SC2712	H.SYNC SW
212	2SK160	Y.CLAMP-1
213	2SC2712	Y.BUFF-2
214	2SK160	B-Y CLAMP
215	2SC2712	R-Y BUFF-2
216	2SK160	B-Y CLAMP
217	2SC2712	B-Y BUFF-2
218	2SA1162	CLAMP
219	2SA1162	REF DC BUFF-1
220	2SC2712	REF DC BUFF-2
221	2SC2712	SCP BUFF
222	2SD774	+ 5V REG
223	2SC2712	BGP SHIFT
224	DTC144EK	50/60 SW-1
225	DTC144EK	50/60 SW-2
226	DTC144EK	V.SYNC SW-5
347	DTC144EK	SYSTEM SW-1
348	DTC144EK	NT4.43 SW
349	DTC144EK	SYSTEM SW-2
350	DTC144EK	ID
351	2SC2712	Y BUFF-3
352	2SC2712	Y CLAMP-2
355	2SC2712	BLK BUFF
356	DTC144EK	MODE SW-5
357	DTC144EK	MODE SW-6
D4	1S2837	NT3.58 DET
6	RD5.1MB2	POW CONT
101	1S2837	SECAM SW
102	1S2837	MODE SW-1
103	1S2837	MODE SW-2
201	V06C	+ 12V PROT
202	1S2835	SYNC SEP.
203	1S2835	H.SYNC SW
204	1S2837	BLK ADD
206	1S2837	W/B SW-2
207	1S2837	W/B SW-3
208	RD3.3MB1	W/B SW-1
209	RD3.3MB1	NT4.43 SW
210	1S2837	Y.CLAMP



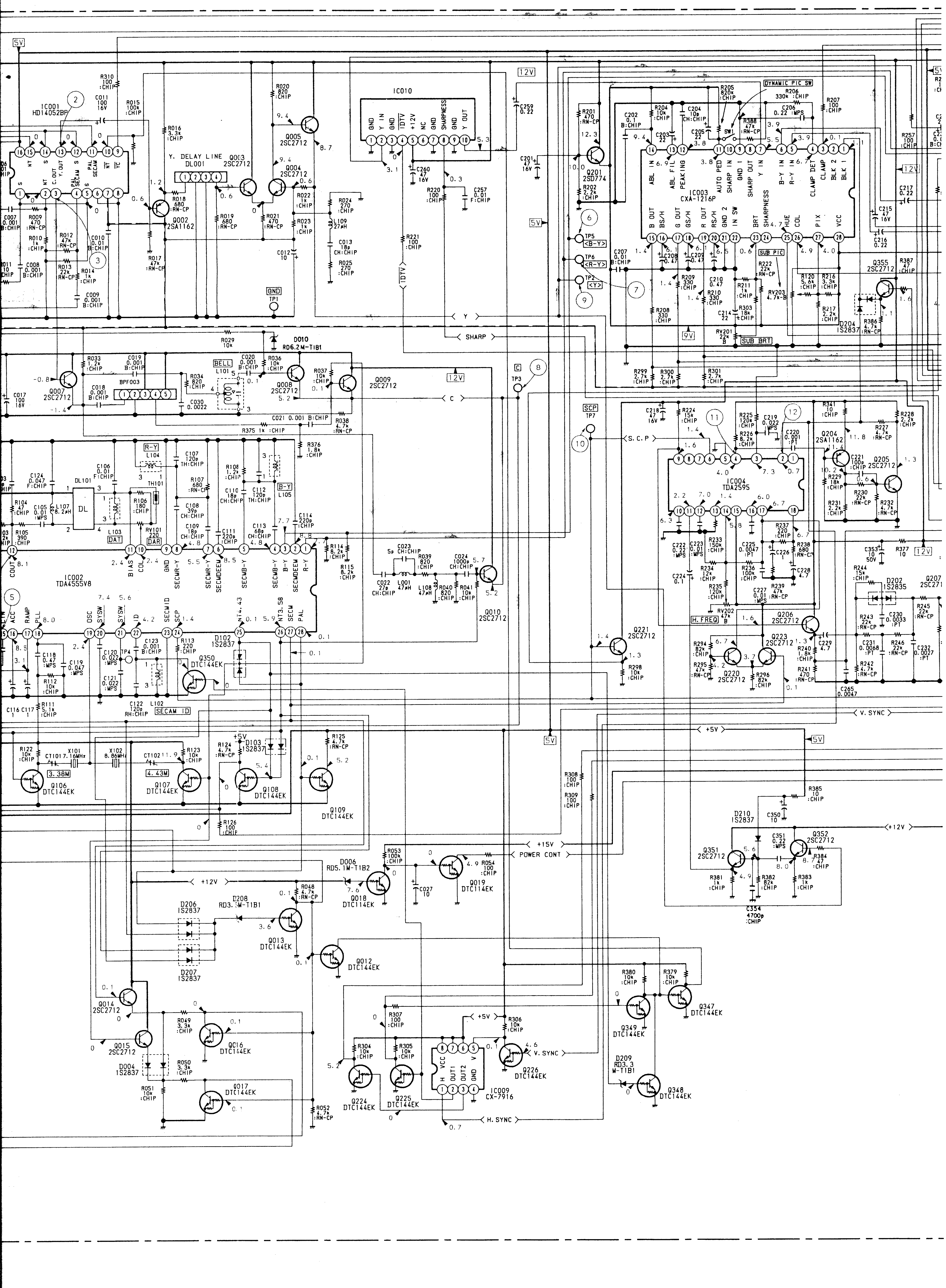
8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19

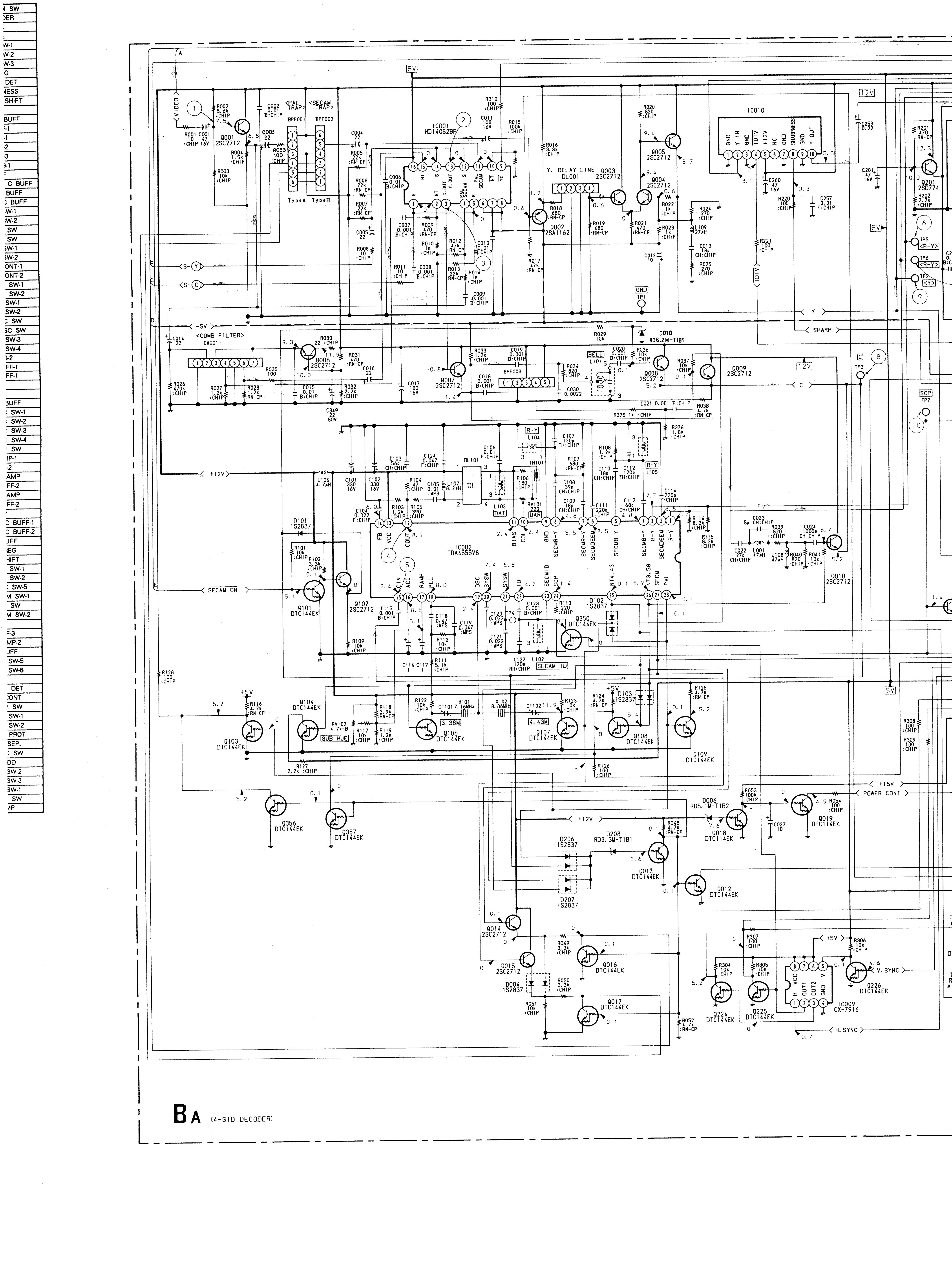
SYSTEM SW
DECORDER
MATRIX
JUNGLE
IDTV SW-1
IDTV SW-2
IDTV SW-3
12V REG
50/60 DET
SHARPNESS
LEVEL SHIFT
VIDEO BUFF
Y BUFF-1
Y AMP-1
Y AMP-2
Y AMP-3
9V REG-1
C BUFF
SECAM C BUFF
PAL C BUFF
NTSC C BUFF
W/B SW-1
W/B SW-2
NT3.58 SW
NT4.43 SW
TRAP SW-1
TRAP SW-2
POW CONT-1
POW CONT-2
SECAM SW-1
SECAM SW-2
MODE SW-1
MODE SW-2
NT OSC SW
PAL OSC SW
MODE SW-3
MODE SW-4
9V REG-2
B-Y BUFF-1
R-Y BUFF-1
AFC-1
AFC-2
SYNC BUFF
V.SYNC SW-1
V.SYNC SW-2
V.SYNC SW-3
V.SYNC SW-4
H.SYNC SW
Y.CLAMP-1
Y.BUFF-2
B-Y CLAMP
R-Y BUFF-2
B-Y CLAMP
B-Y BUFF-2
CLAMP
REF DC BUFF-1
REF DC BUFF-2
SCP BUFF
+5V REG
BGP SHIFT
50/60 SW-1
50/60 SW-2
V.SYNC SW-5
SYSTEM SW-1
NT4.43 SW
SYSTEM SW-2
ID
Y BUFF-3
Y CLAMP-2
BLK BUFF
MODE SW-5
MODE SW-6
NT3.58 DET
POW CONT
SECAM SW
MODE SW-1
MODE SW-2
+12V PROT
SYNC SEP.
H.SYNC SW
BLK ADD
W/B SW-2
W/B SW-3
W/B SW-1
NT4.43 SW
Y.CLAMP



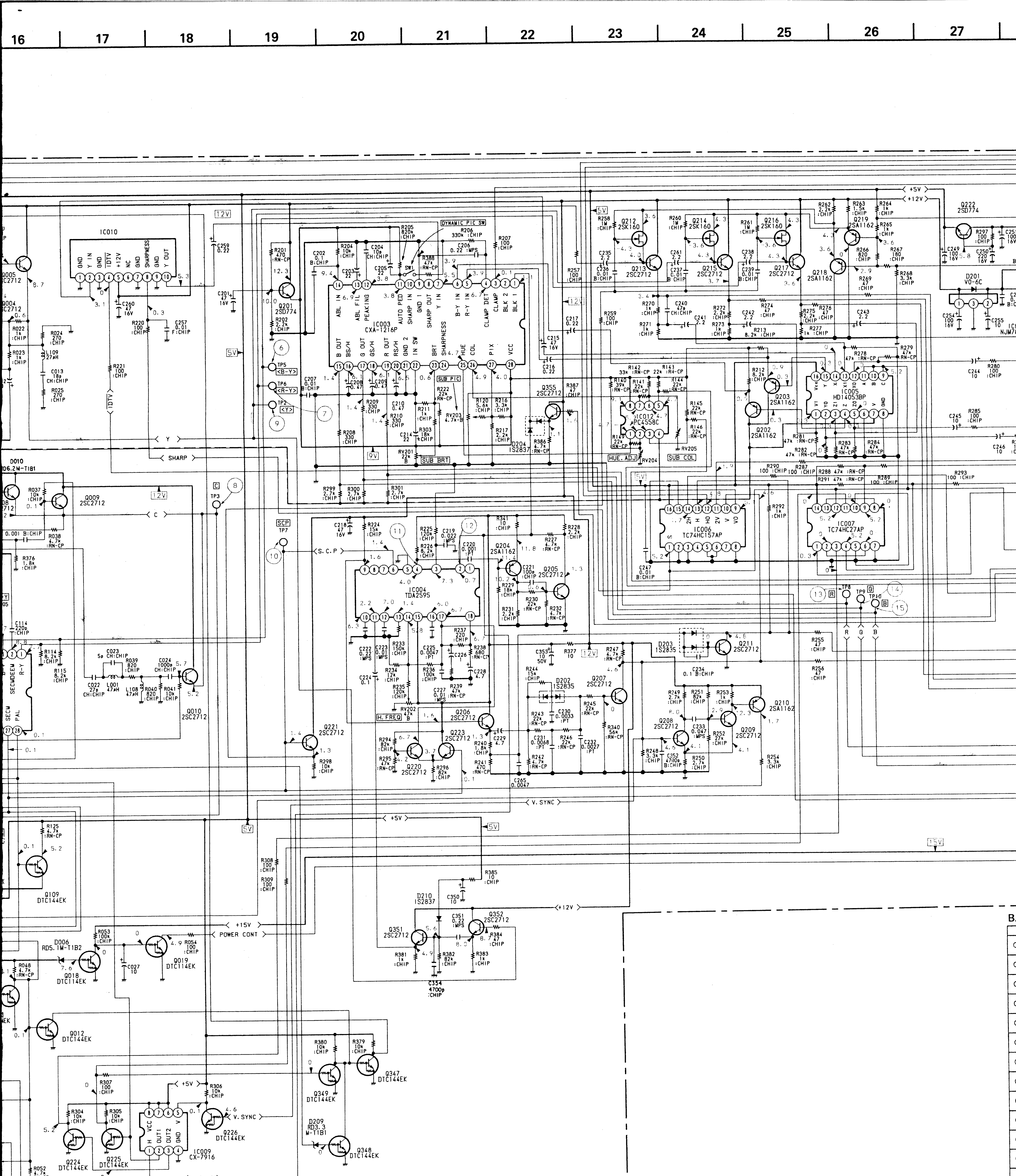
B A (4-STD DECODER)

13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22





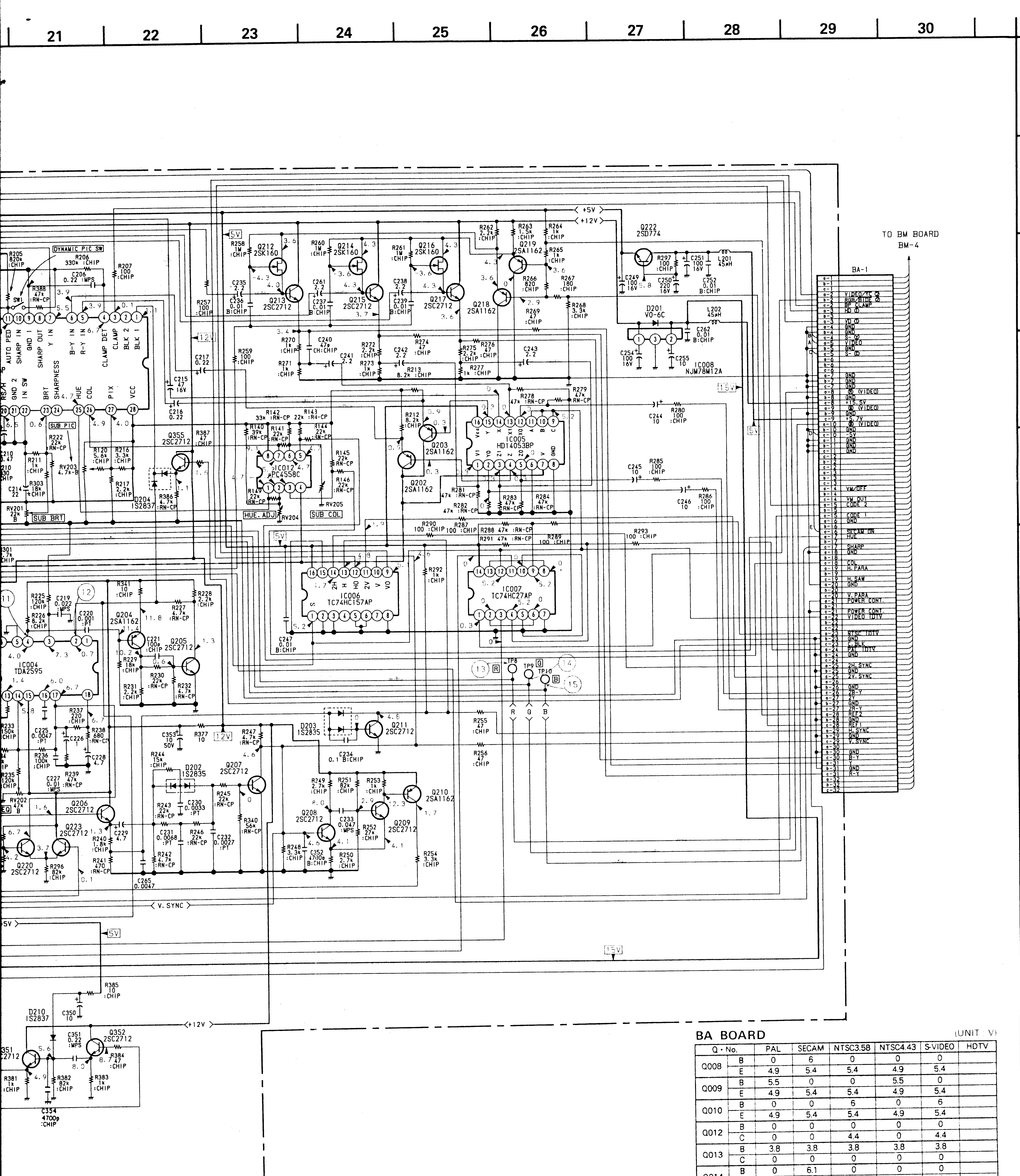
B A (4-STD DECODER)



BA BOARD

(UNIT : V)

IC	PIN No.	PAL	SECAM	NTSC3.58	NTSC4.43	S-VIDEO	HDTV
IC001	①	0	0	0	0	−0.4	
	③	−0.8	−0.8	0	−0.8	−0.4	
	④	−0.8	−0.8	0	−0.8	0	
	⑤	0	0	0	0	−0.4	
	⑨	5	5	5	5	0	
	⑩	4.7	4.7	0	4.7	0	
IC002	⑤	5.7	4.3	6.2	6.1	6.2	
	⑥	8	8.6	8.8	8.8	8.8	
	⑦	5.8	4.4	6	5.8	5.5	
	⑲	2.6	3	2.6	2.6	2.6	
	⑳	5.9	5.9	7.6	7.6	7.6	
	㉑	8	7.3	5.9	5.8	5.8	
	㉕	0	0	0	6.1	0	
	㉖	0	0	6.1	0	6.1	
	㉗	0	6.1	0	0	0	
	㉘	6.1	0	0	0	0	
IC007	③	0	0	5.1	5.1	5.1	
	⑪	4.3	4.3	0	0	0	



BA BOARD

(UNIT : V)

IC	PIN No.	PAL	SECAM	NTSC3.58	NTSC4.43	S-VIDEO	HDTV
IC001	①	0	0	0	0	−0.4	
	③	−0.8	−0.8	0	−0.8	−0.4	
	④	−0.8	−0.8	0	−0.8	0	
	⑤	0	0	0	0	−0.4	
	⑨	5	5	5	5	0	
	⑩	4.7	4.7	0	4.7	0	
IC002	⑤	5.7	4.3	6.2	6.1	6.2	
	⑥	8	8.6	8.8	8.8	8.8	
	⑦	5.8	4.4	6	5.8	5.5	
	⑲	2.6	3	2.6	2.6	2.6	
	⑳	5.9	5.9	7.6	7.6	7.6	
	㉑	8	7.3	5.9	5.8	5.8	
	㉕	0	0	0	6.1	0	
	㉖	0	0	6.1	0	6.1	
	㉗	0	6.1	0	0	0	
	㉘	6.1	0	0	0	0	
IC007	③	0	0	5.1	5.1	5.1	
	⑪	4.3	4.3	0	0	0	

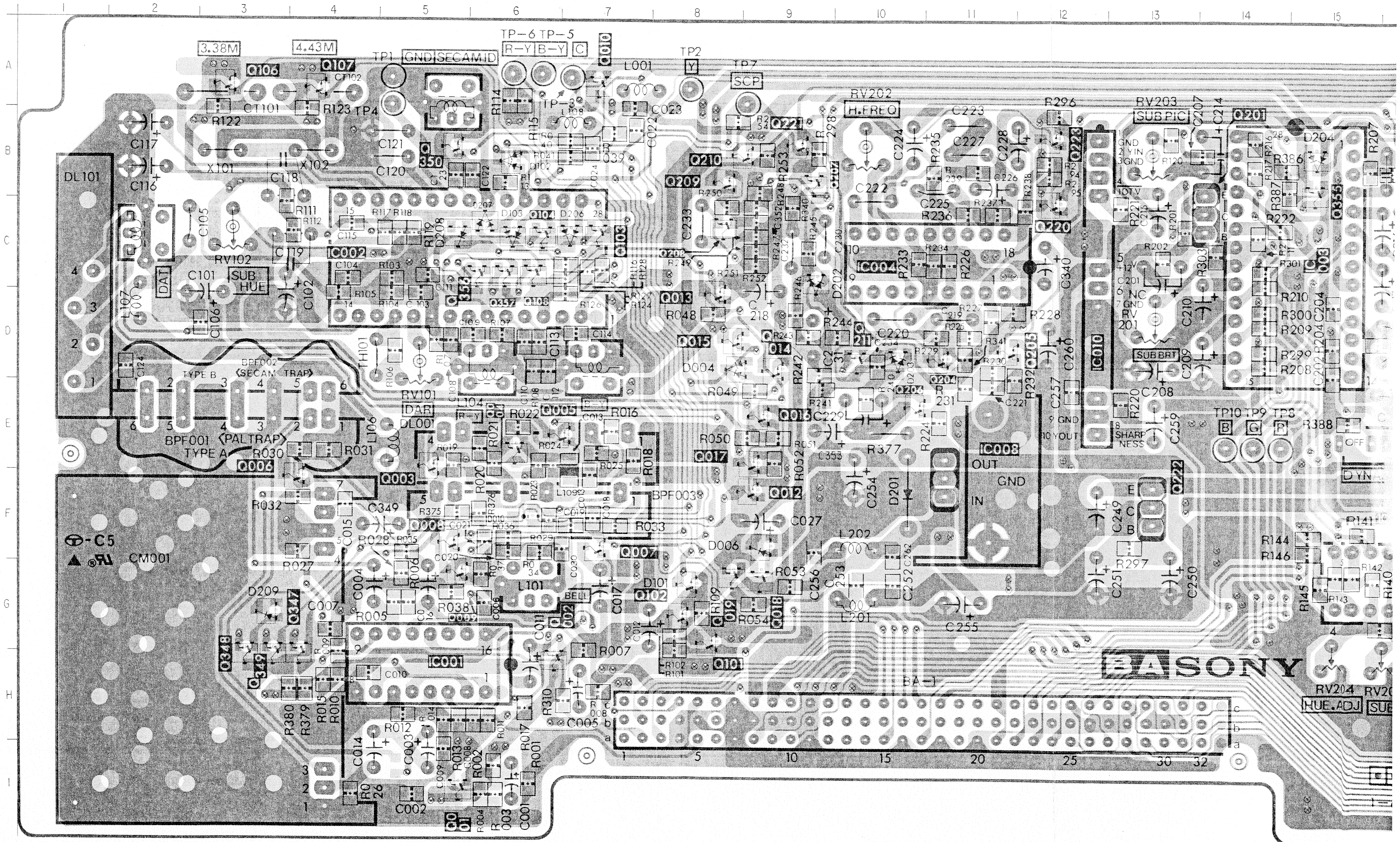
BA BOARD

(UNIT : V)

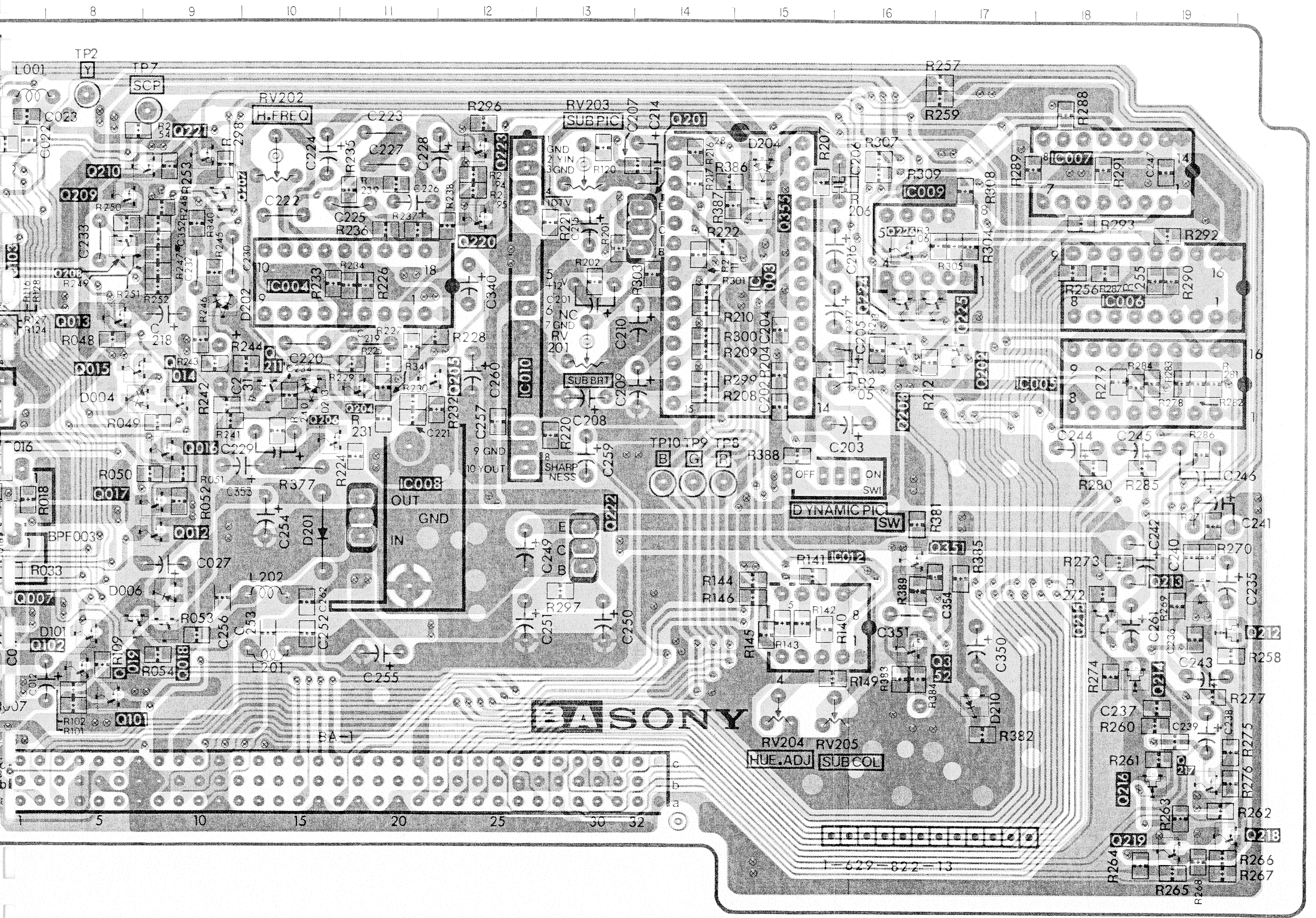
Q · No.		PAL	SECAM	NTSC3.58	NTSC4.43	S-VIDEO	HDTV
Q008	B	0	6	0	0	0	
	E	4.9	5.4	5.4	4.9	5.4	
Q009	B	5.5	0	0	5.5	0	
	E	4.9	5.4	5.4	4.9	5.4	
Q010	B	0	0	6	0	6	
	E	4.9	5.4	5.4	4.9	5.4	
Q012	B	0	0	0	0	0	
	C	0	0	4.4	0	4.4	
Q013	B	3.8	3.8	3.8	3.8	3.8	
	C	0	0	0	0	0	
Q014	B	0	6.1	0	0	0	
	E	0	5.5	0	0	0	
Q015	B	5.6	0	0	5.6	0	
	E	5	2	0	5	0	
Q016	B	0	0	0	0	0	
	C	0	4.1	0	0	0	
Q017	B	0	0	0	0	0	
	C	3.2	3.5	0	3.2	0	
Q019	B	0	0	0	0	0	
	C	0.9	4.9	4.9	4.9	4.9	
Q103	B	6.1	0	0	0	0	
	C	0	5.2	5.2	5.1	5.1	
Q104	B	0	0	6.1	0	6.1	
	C	5.2	5.2	0	5.2	0	
Q106	B	0	0	6.1	0	6.1	
	C	12.3	12.3	0	12.3	0	
Q107	B	5.6	0	0	5.6	0	
	C	0	12.3	12.3	0	12.3	
Q108	B	0	0	5.6	5.6	5.6	
	C	5.1	5.2	0	0	0	
Q109	B	6.1	0	0	0	0	
	C	2.8	5.2	5.2	5.2	5.2	
Q224	B	5.1	5.1	0	0	0	
	C	0	0	5.1	5.1	5.1	
Q225	B	0	0	5.1	5.1	5.1	
	C	4.3	4.3	0	0	0	
Q347	B	0	0	4.4	0	4.4	
	C	0	4.7	0	4.7	0	
Q348	B	0	0	0	4.2	0	
	C	0	0	4.4	0	4.4	
Q349	B	4.3	4.3	0	0	0	
	C	0	0	4.4	0	4.4	
Q356	B	0	0	0	0	0	
	C	0	5.2	5.1	5.1	5.1	
Q357	B	0	0	0	0	0	
	C	5.1	5.2	0	0	0	

BA [4-STD DECODER]

– BA Board –



[...ODER]



BA BOARD

IC	
IC1	H – 5
IC2	C – 4
IC3	C – 15
IC4	C – 10
IC5	D – 18
IC6	C – 18
IC7	B – 18
IC8	F – 11
IC9	C – 16
IC10	D – 12
IC12	G – 15

TRANSISTOR	
Q1	I – 5
Q2	H – 6
Q3	E – 5
Q4	E – 6
Q5	E – 6
Q6	F – 4
Q7	F – 7
Q8	F – 5
Q9	G – 5
Q10	A – 7
Q12	F – 9
Q13	D – 8
Q14	D – 9
Q15	D – 8
Q16	E – 9
Q17	E – 9
Q18	G – 9
Q19	G – 8
Q101	G – 8
Q102	G – 8
Q103	C – 7
Q104	C – 6
Q106	A – 3
Q107	A – 4
Q108	C – 6
Q109	B – 8
Q201	C – 14
Q202	D – 17
Q203	D – 16
Q204	D – 11
Q205	D – 11
Q206	E – 10
Q207	B – 9
Q208	C – 8
Q209	B – 8
Q210	B – 8
Q211	D – 10
Q212	G – 19
Q213	F – 19
Q214	G – 19
Q215	G – 18
Q216	H – 19
Q217	H – 19
Q218	I – 19
Q219	I – 19
Q220	C – 12
Q221	B – 9
Q222	F – 13
Q223	B – 12
Q224	C – 16
Q225	C – 16
Q226	C – 16
Q347	H – 4
Q348	H – 3
Q349	H – 3
Q350	B – 5
Q351	F – 16
Q352	G – 16
Q355	B – 15
Q356	C – 6
Q357	C – 6

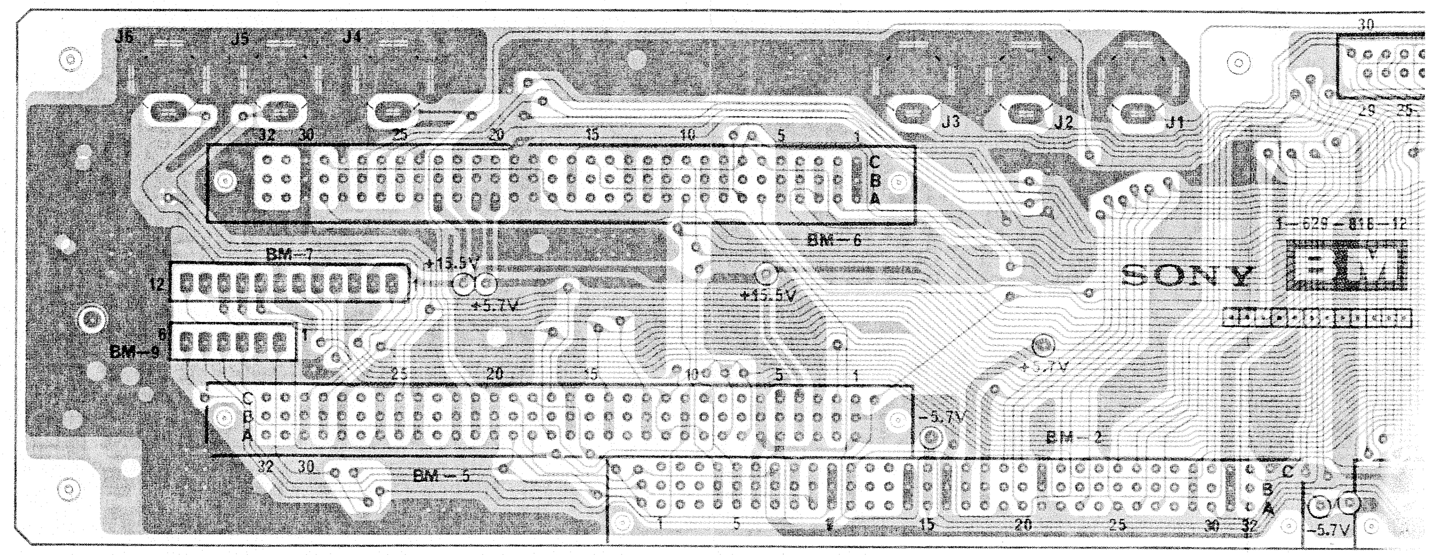
DIODE	
D4	D – 8
D6	F – 9
D101	G – 8
D102	B – 6
D103	C – 6
D201	F – 10
D202	C – 9
D203	D – 10
D204	B – 15
D206	C – 7
D207	C – 6
D208	C – 5
D209	G – 3
D210	G – 17

VARIABLE RESISTOR	
CT101	A – 3
CT102	A – 4
RV101	D – 5
RV102	C – 3
RV201	D – 13
RV202	B – 10
RV203	B – 13
RV204	H – 15
RV205	H – 16

HDIH-1

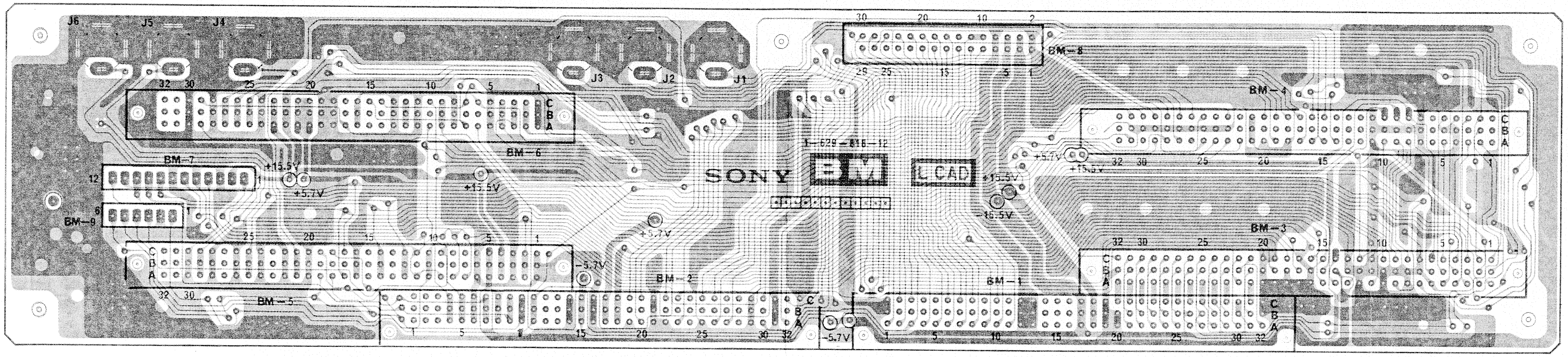
BM

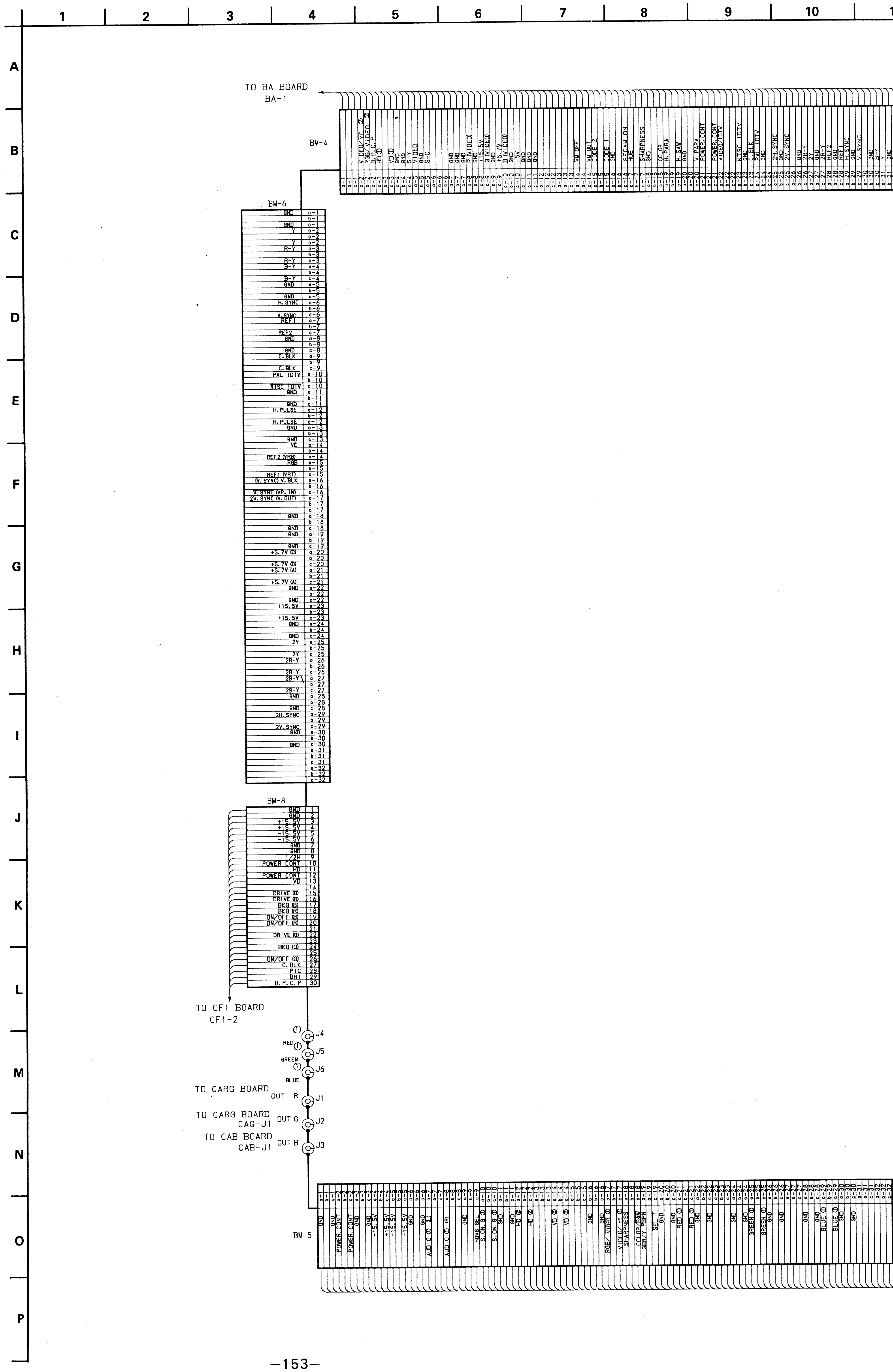
– BM Board –

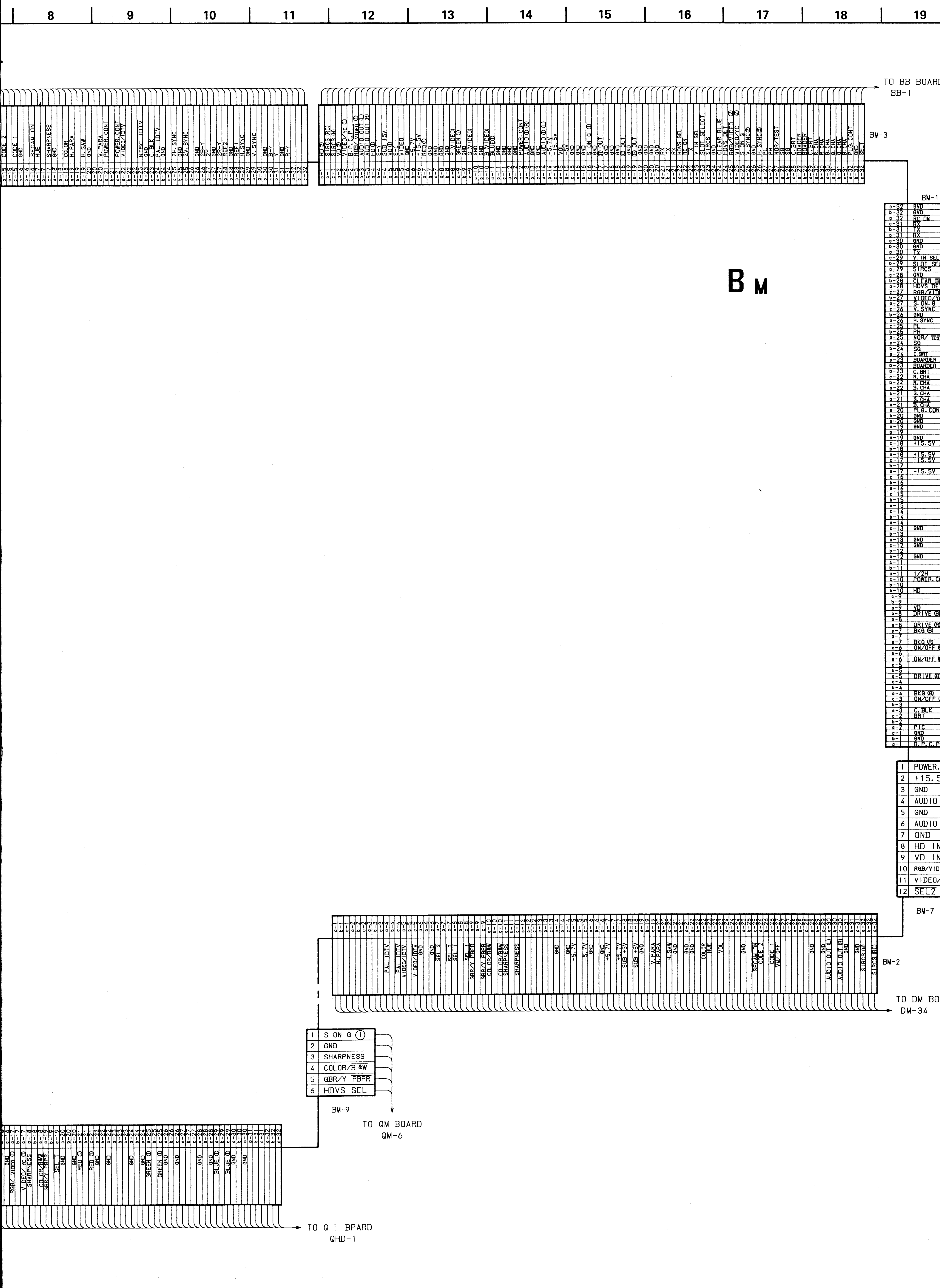


BM [DEFLECTION MOTHER BOARD]

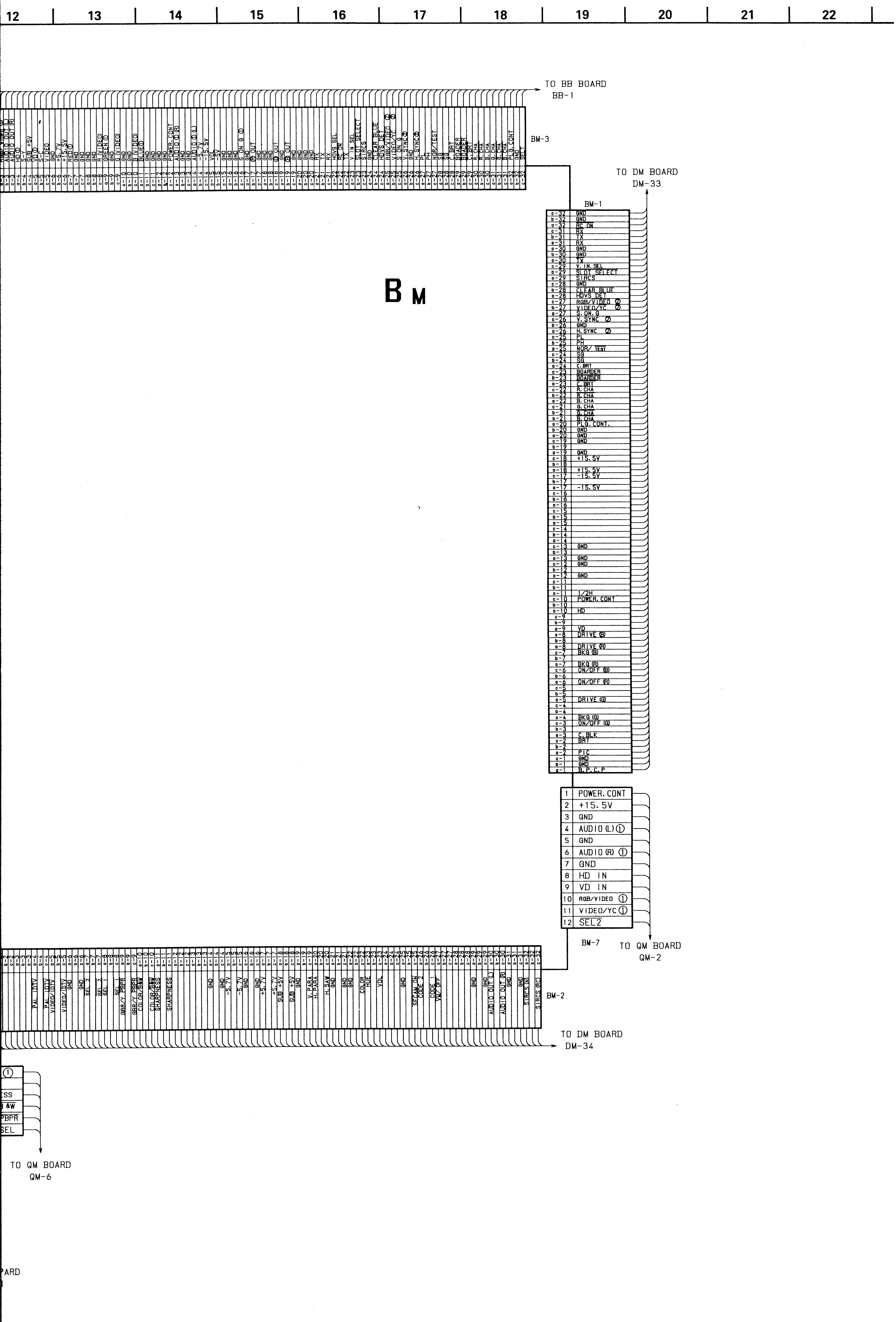
– BM Board –



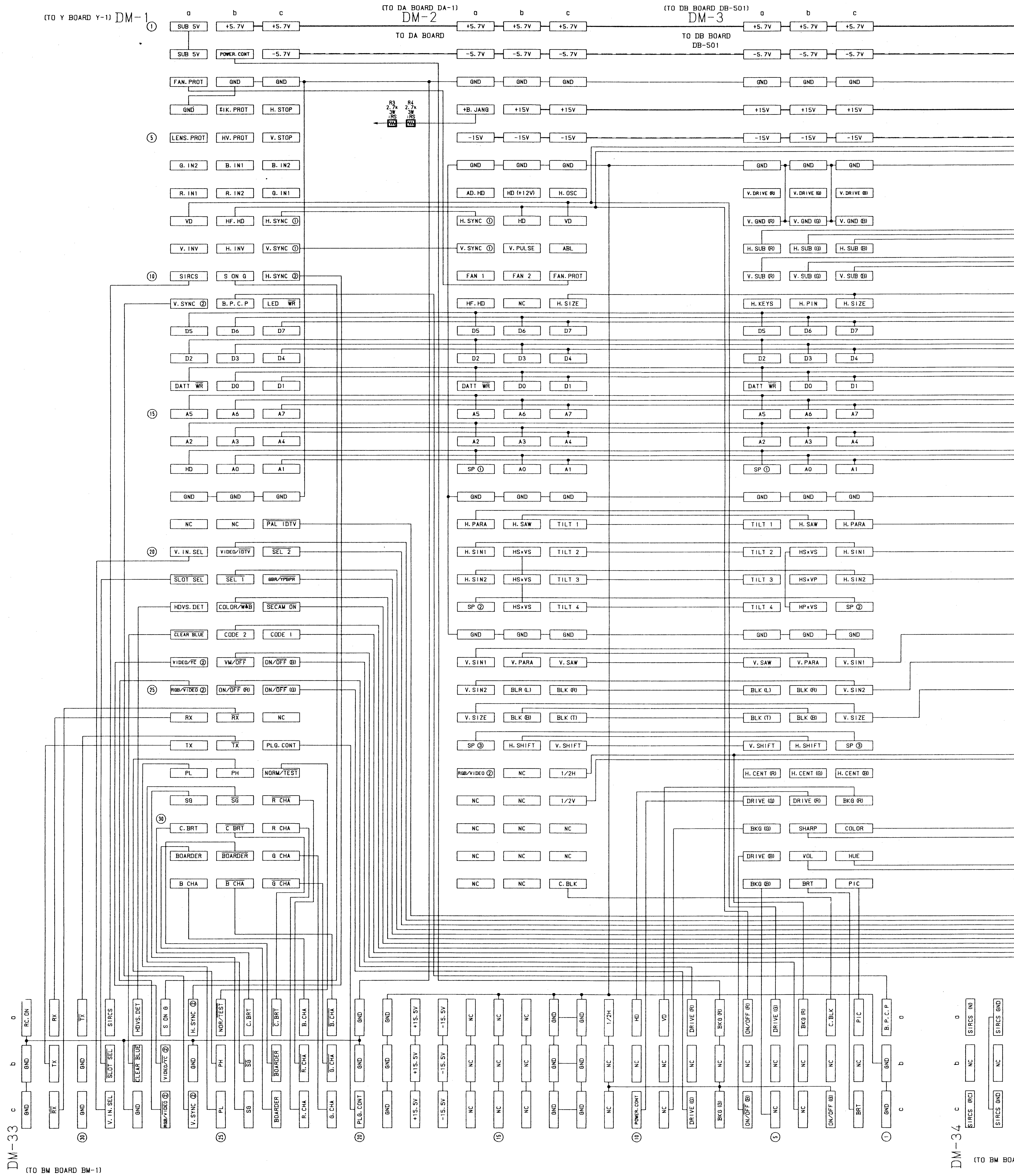

TO BA BOARD
BA-1
BM-4
BM-6
BM-8
GND
+15.5V
-15.5V
1/2H
POWER CONT
HD
VD
DRIVE (B)
DRIVE (R)
BKG (B)
BKG (R)
ON/OFF (B)
ON/OFF (R)
DRIVE (G)
BKG (G)
ON/OFF (G)
C.BLK
PIC
BRT
B.P.C.P
TO CF1 BOARD
CF1-2
J4
RED
J5
GREEN
J6
BLUE
TO CARG BOARD
OUT R
J1
TO CARG BOARD
CAG-J1
OUT G
J2
TO CAB BOARD
CAB-J1
OUT B
J3
BM-5



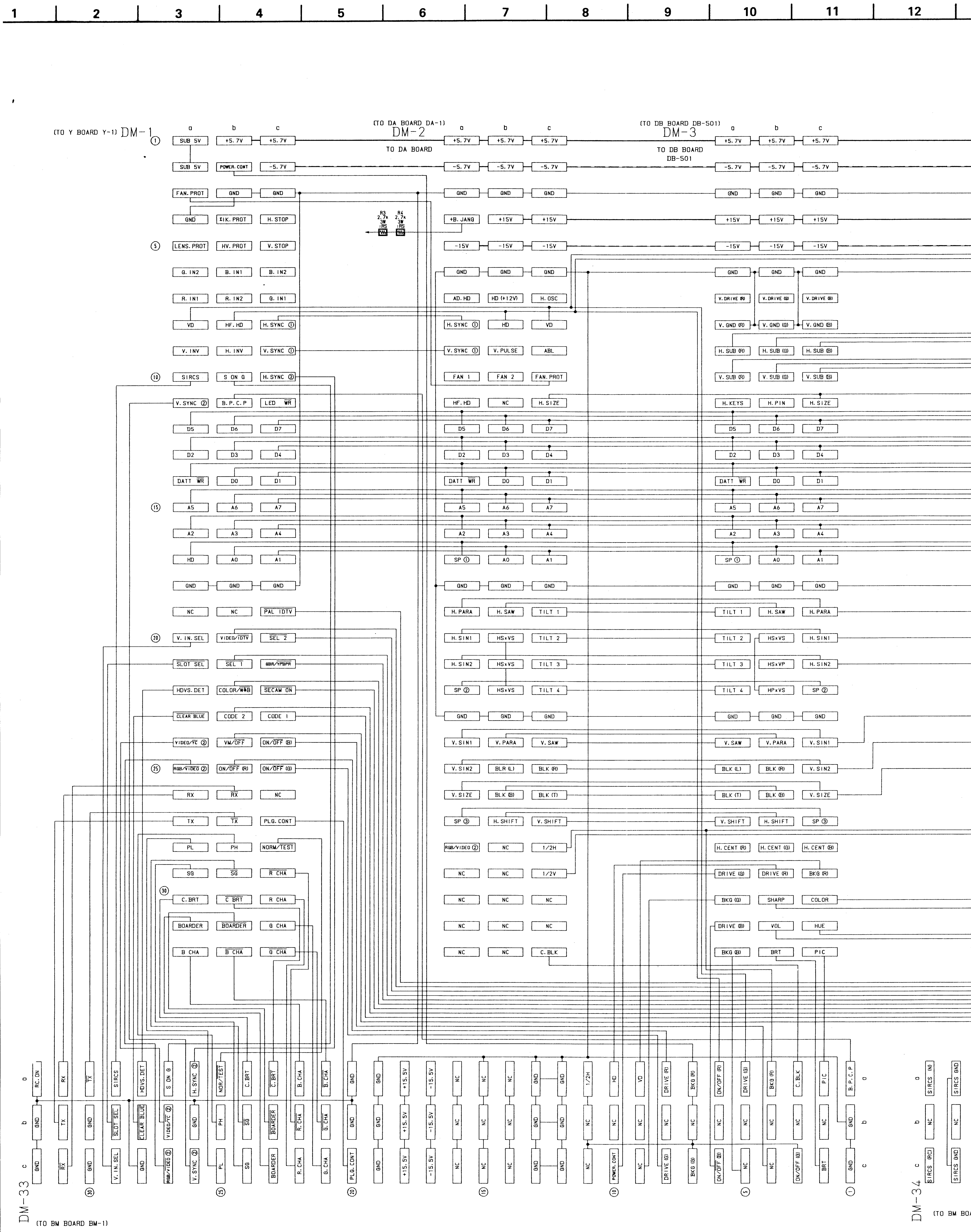
TO BB BOARD
BB-1
BM-3
BM-1
B M
BM-7
BM-2
TO DM BO
DM-34
S ON G ①
GND
SHARPNESS
COLOR/B &W
GBR/Y PBPR
HDVS SEL
BM-9
TO QM BOARD
QM-6
TO Q ' BPARD
QHD-1


12
13
14
15
16
17
18
19
20
21
22
TO BB BOARD
BB-1
BM-3
TO DM BOARD
DM-33
BM-1
B M
1 POWER. CONT
2 +15. 5V
3 GND
4 AUDIO (L) ①
5 GND
6 AUDIO (R) ①
7 GND
8 HD IN
9 VD IN
10 RGB/VIDEO ①
11 VIDEO/YC ①
12 SEL2
BM-7
TO QM BOARD
QM-2
BM-2
TO DM BOARD
DM-34
TO QM BOARD
QM-6

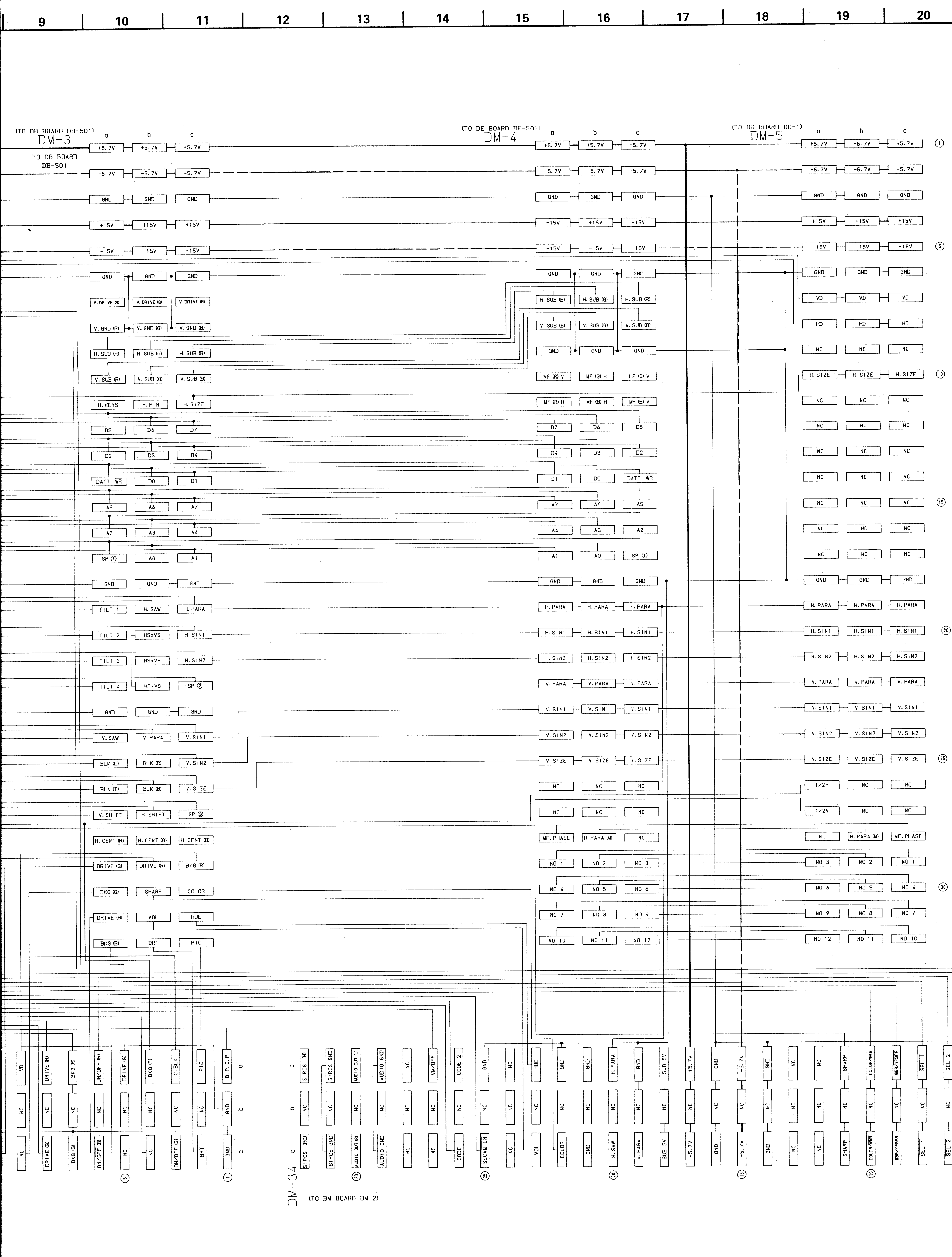
1	2	3	4	5	6	7	8	9	10	11	12



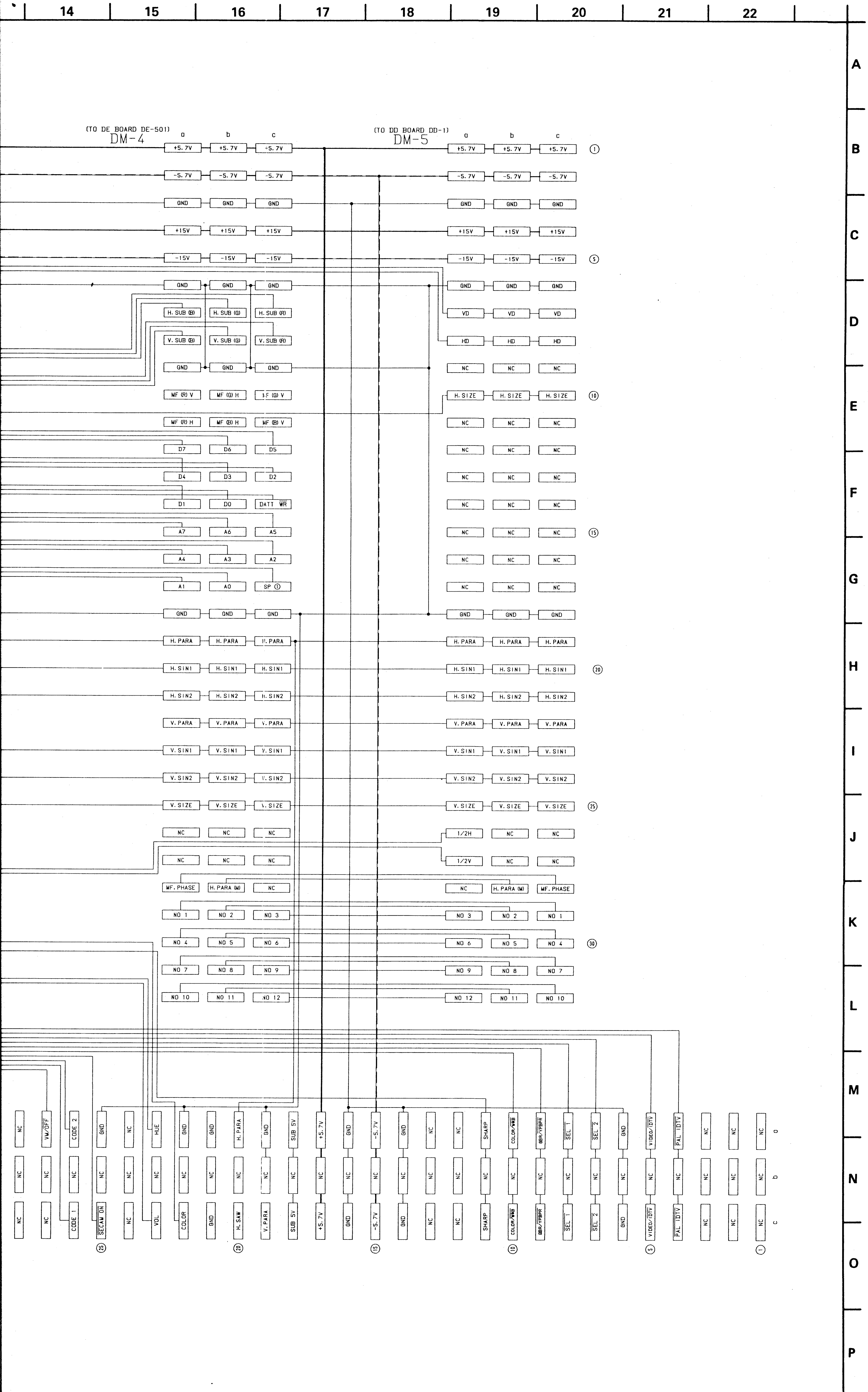
D M (DEFLECTION MOTHER BOARD)

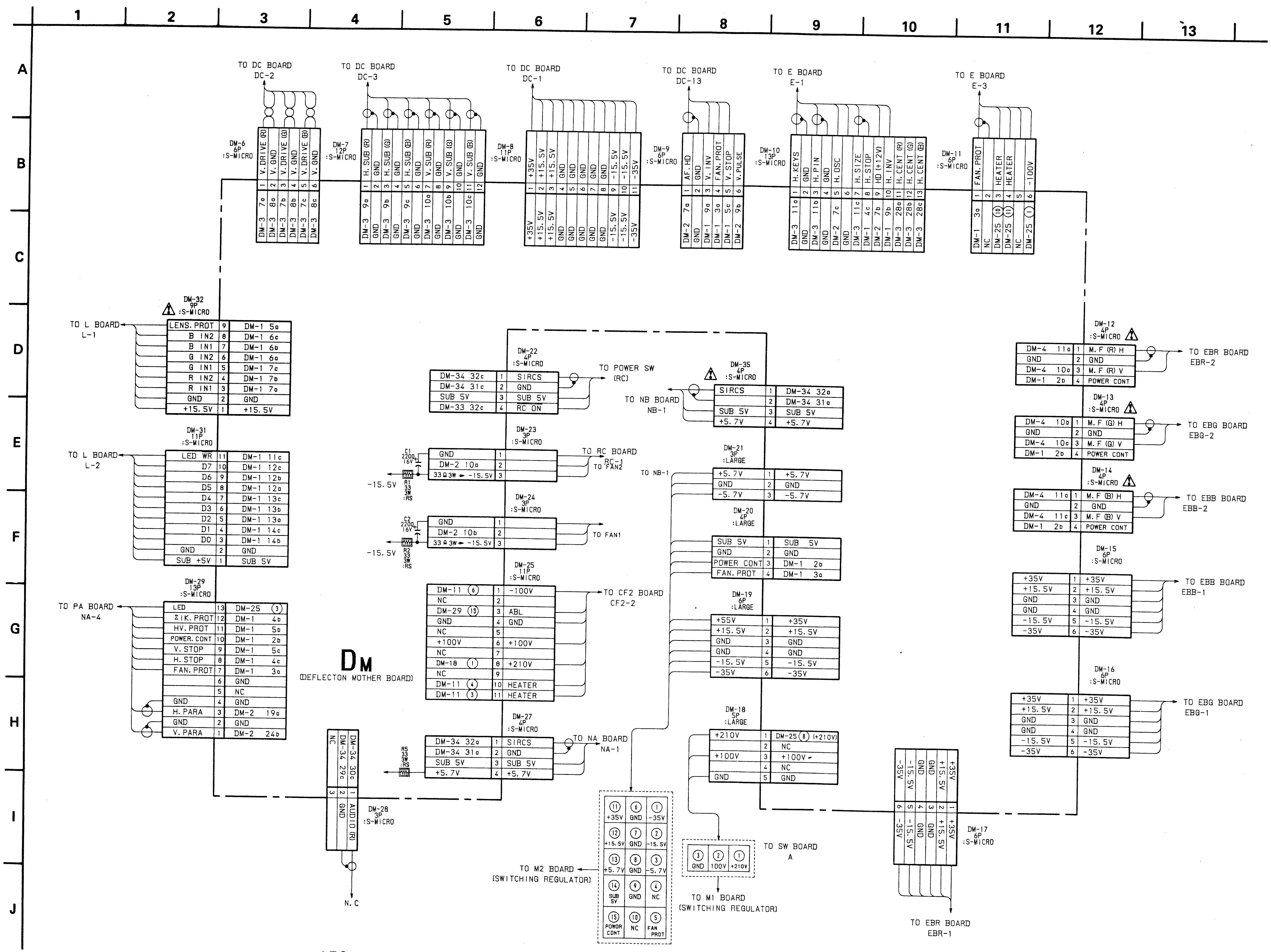


DM (DEFLECTION MOTHER BOARD)

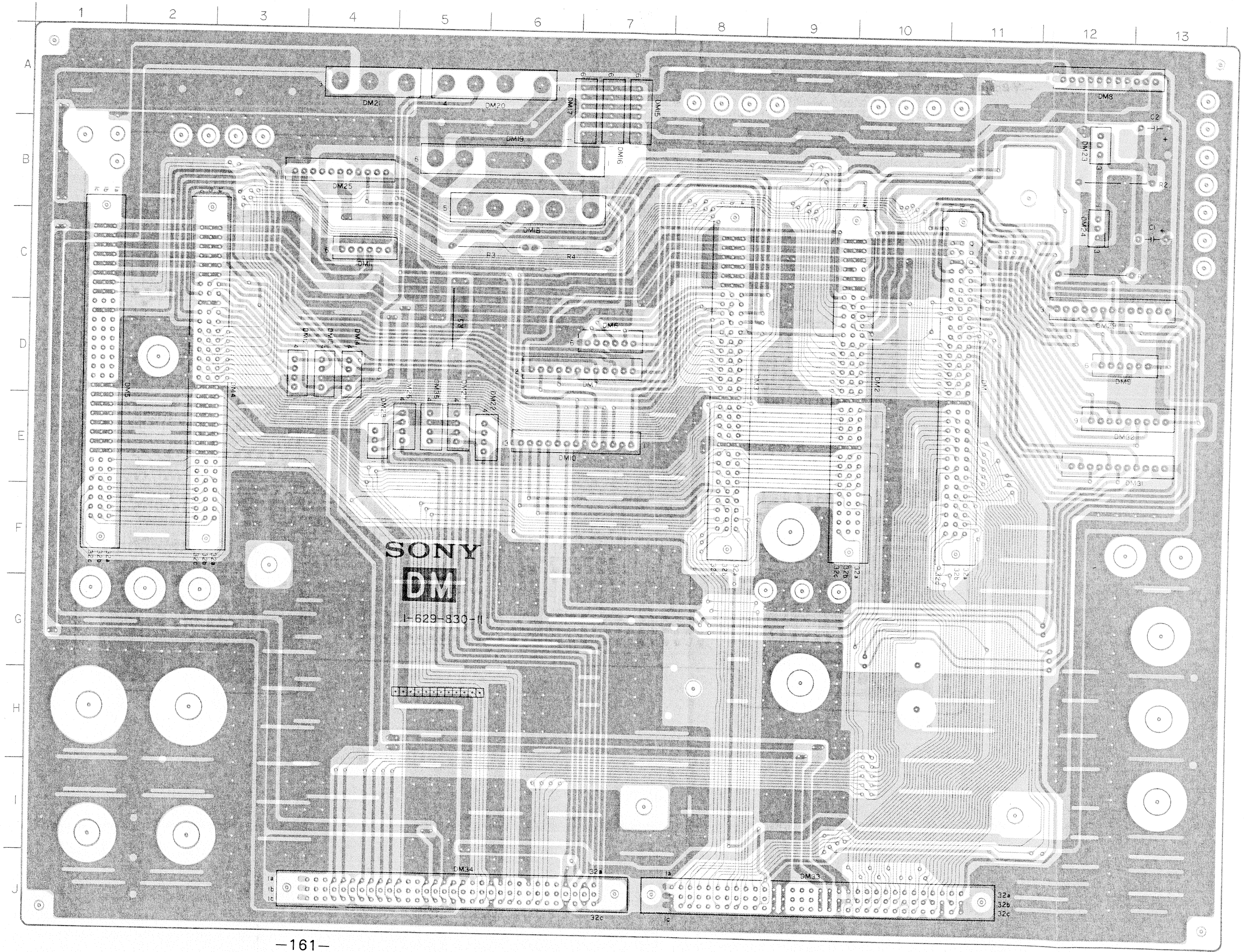


(TO DB BOARD DB-501)
DM-3
TO DB BOARD DB-501
(TO DE BOARD DE-501)
DM-4
(TO DD BOARD DD-1)
DM-5
DM-34
(TO BM BOARD BM-2)


(TO DE BOARD DE-501)
DM-4
(TO DD BOARD DD-1)
DM-5
a
b
c
+5.7V
-5.7V
GND
+15V
-15V
H. SUB (B)
H. SUB (G)
H. SUB (R)
V. SUB (B)
V. SUB (G)
V. SUB (R)
VD
HD
NC
MF (R) V
MF (G) H
MF (G) V
H. SIZE
MF (R) H
MF (B) H
MF (B) V
D7
D6
D5
D4
D3
D2
D1
D0
DATT WR
A7
A6
A5
A4
A3
A2
A1
A0
SP (T)
H. PARA
H. SIN1
H. SIN2
V. PARA
V. SIN1
V. SIN2
V. SIZE
1/2H
1/2V
MF. PHASE
H. PARA (M)
NO 1
NO 2
NO 3
NO 4
NO 5
NO 6
NO 7
NO 8
NO 9
NO 10
NO 11
NO 12
VM/OFF
CODE 2
CODE 1
SECAM ON
HUE
VOL
COLOR
H. SAW
V. PARA
SUB 5V
SHARP
COLOR/
GBR/YPBPR
SEL 1
SEL 2
VIDEO/IDTV
PAL IDTV
14
15
16
17
18
19
20
21
22
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P

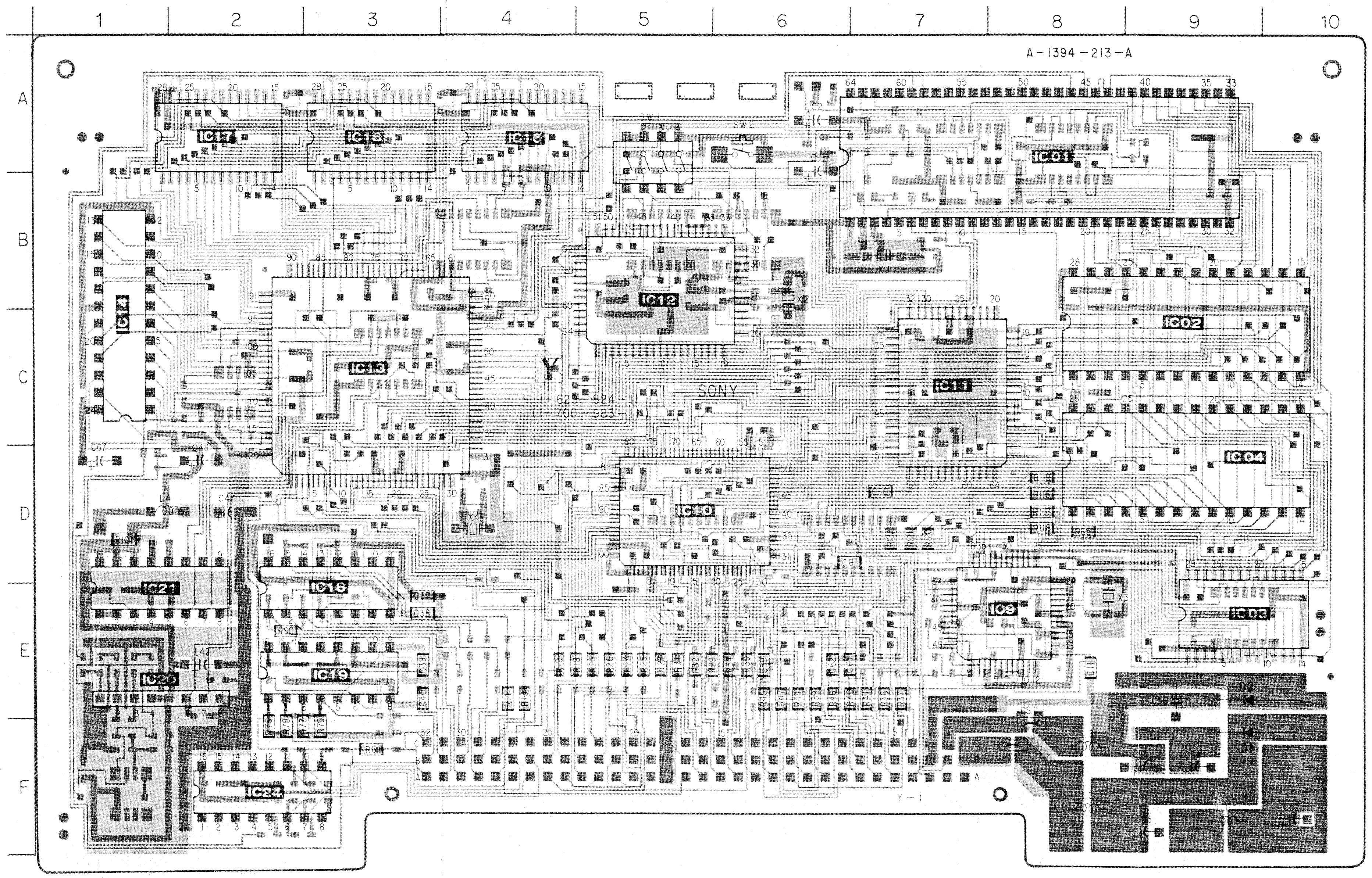

DM
(DEFLECTON MOTHER BOARD)
TO DC BOARD DC-2
TO DC BOARD DC-3
TO DC BOARD DC-1
TO DC BOARD DC-13
TO E BOARD E-1
TO E BOARD E-3
TO L BOARD L-1
TO L BOARD L-2
TO PA BOARD NA-4
TO POWER SW (RC)
TO NB BOARD NB-1
TO RC BOARD RC-1
TO FAN2
TO FAN1
TO NB-1
TO CF2 BOARD CF2-2
TO NA BOARD NA-1
TO EBR BOARD EBR-2
TO EBG BOARD EBG-2
TO EBB BOARD EBB-2
TO EBB BOARD EBB-1
TO EBG BOARD EBG-1
TO M2 BOARD (SWITCHING REGULATOR)
TO SW BOARD A
TO M1 BOARD (SWITCHING REGULATOR)
TO EBR BOARD EBR-1
N.C

DM [DEFLECTION MOTHER BOARD]



Y [CPU MEMORY]

– **Y Board** – *(Conponemt Side)*



IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC9
IC10
IC11
IC12
IC13
IC14
IC15
IC16
IC17
IC18
IC19
IC20
IC21
IC22
IC23
IC24
IC25
IC26
IC27
IC28
IC29

Q1
Q2
Q3
Q4
Q5
Q6
Q7

D1
D2
D3
D4

Y [CPU MEMORY]

Y BOARD

IC

	CONDUCTOR SIDE	COMPONENT SIDE
IC1		A – 8
IC2		C – 9
IC3		E – 9
IC4		D – 9
IC5	A – 3	
IC6	A – 3	
IC7	D – 4	
IC8	D – 5	
IC9		E – 8
IC10		D – 5
IC11		C – 7
IC12		B – 5
IC13		C – 3
IC14		B – 1
IC15		A – 4
IC16		A – 3
IC17		A – 2
IC18		E – 3
IC19		E – 3
IC20		E – 1
IC21		E – 1
IC22	C – 9	
IC23	C – 8	
IC24		F – 2
IC25	F – 10	
IC26	B – 5	
IC27	B – 6	
IC28	E – 1	
IC29	B – 7	

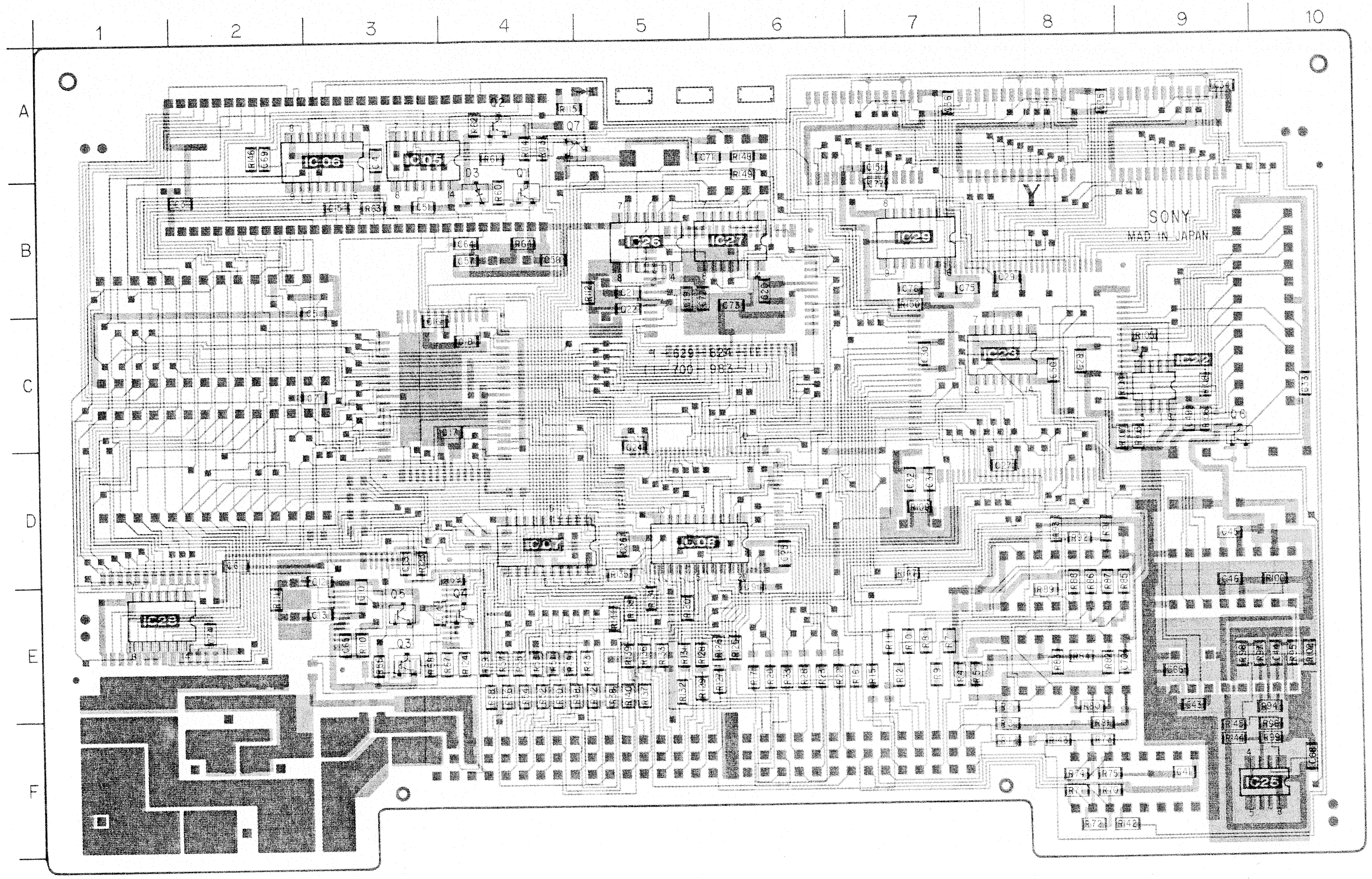
TRANSISTOR

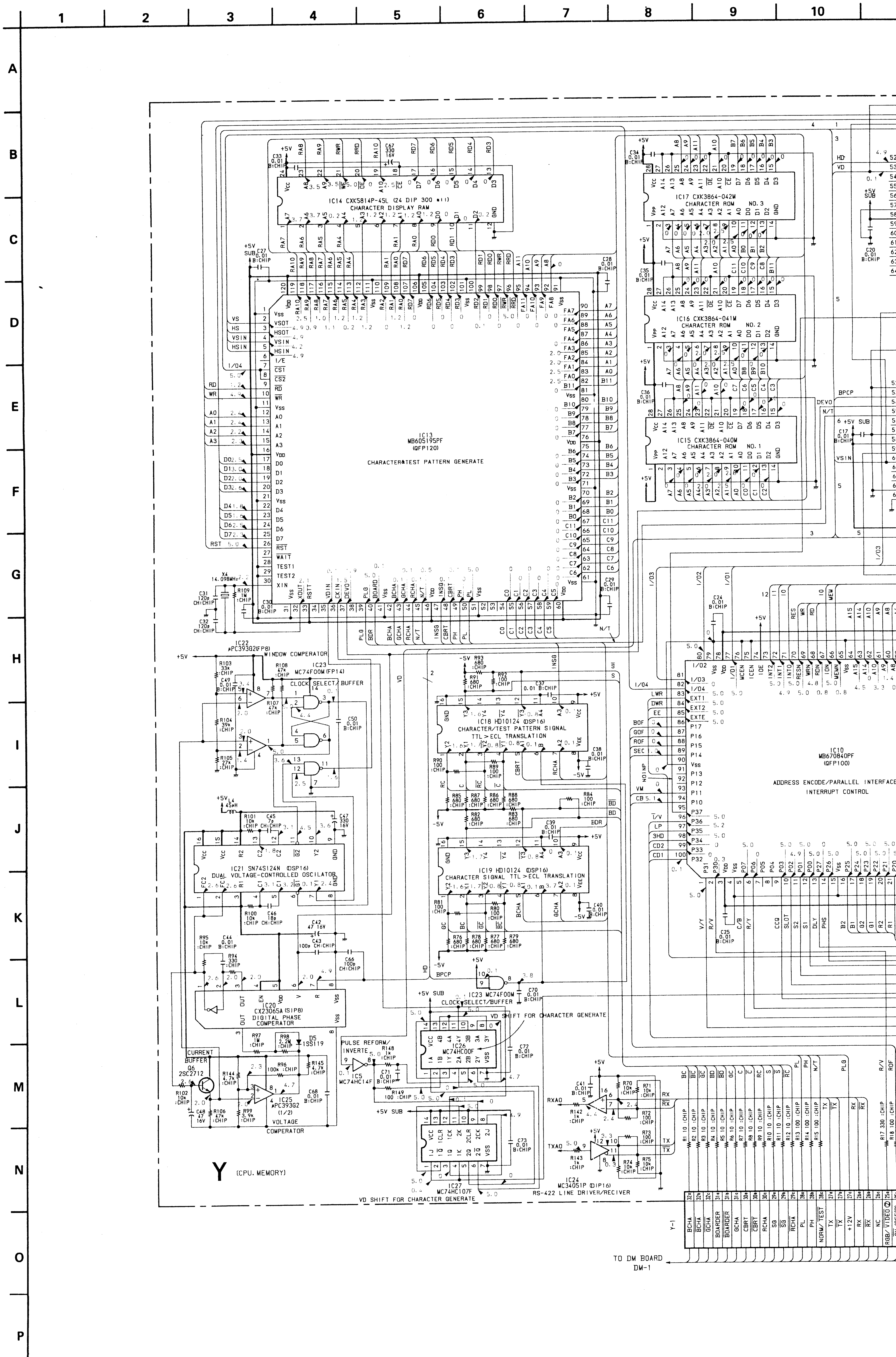
	CONDUCTOR SIDE	COMPONENT SIDE
Q1	B – 4	
Q2	A – 4	
Q3	E – 3	
Q4	E – 4	
Q5	E – 3	
Q6	C – 9	
Q7	A – 4	

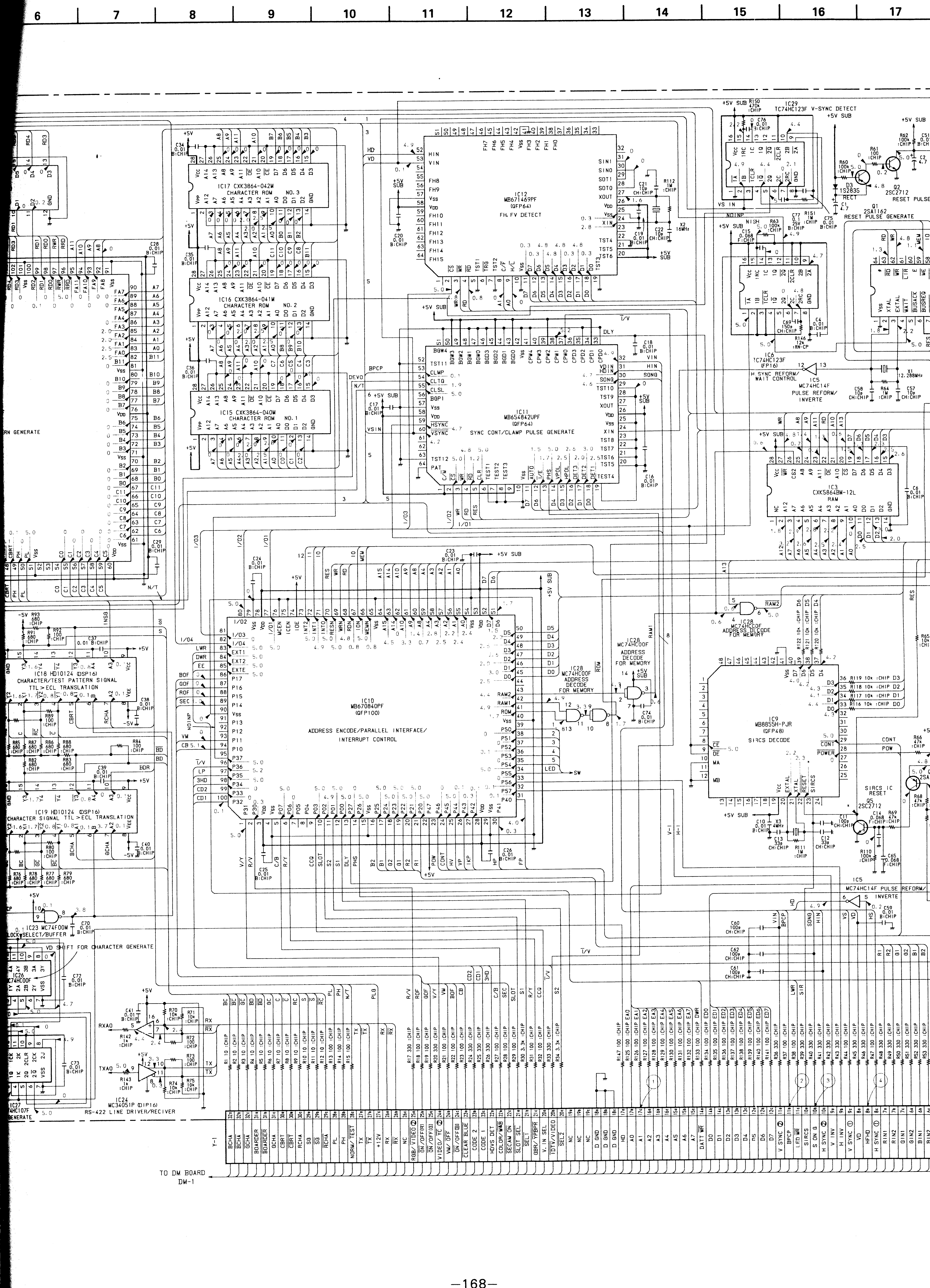
DIODE

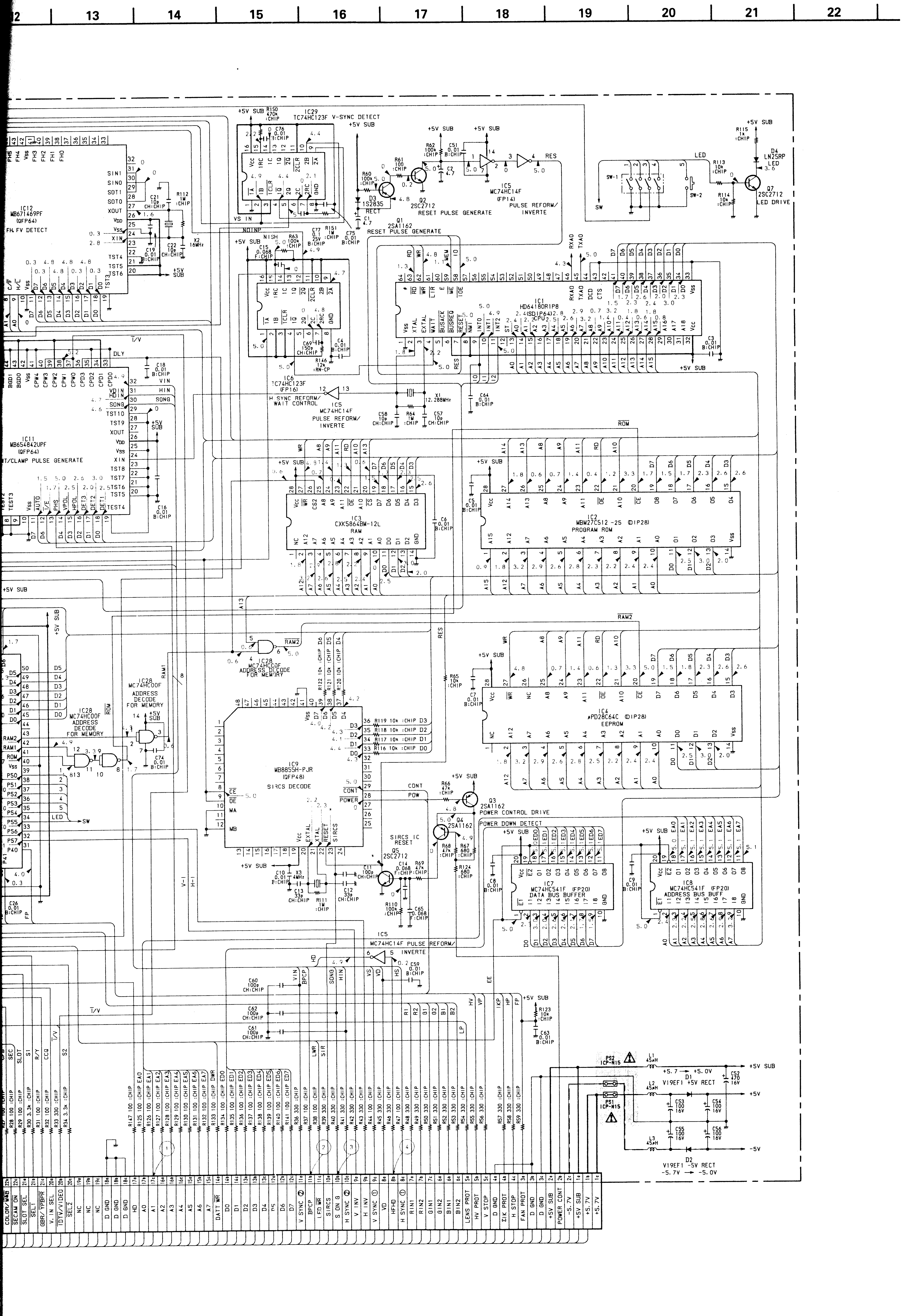
	CONDUCTOR SIDE	COMPONENT SIDE
D1		F – 9
D2		E – 9
D3	B – 4	
D4	A – 5	

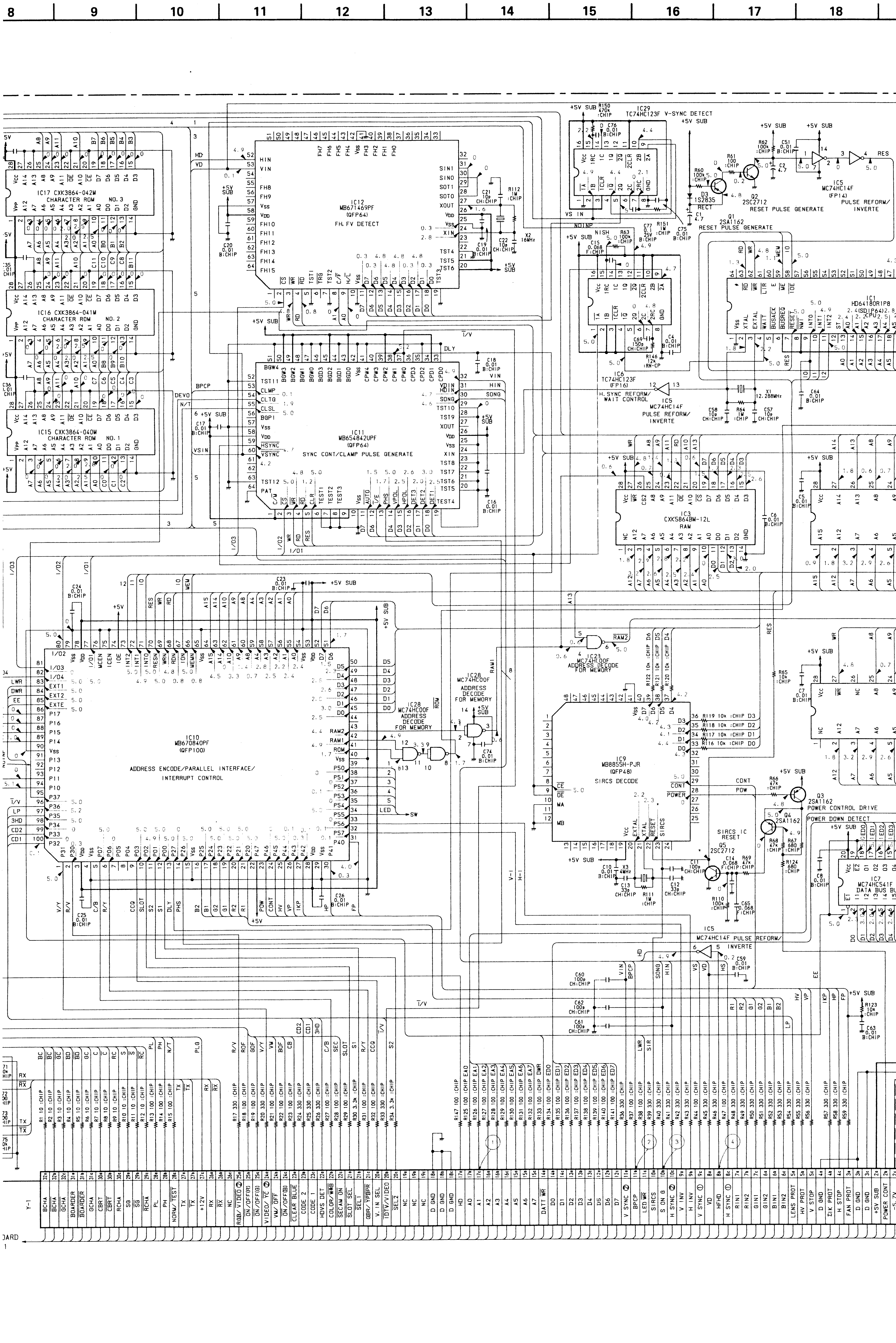
– Y Board – *(Conductor Side)*



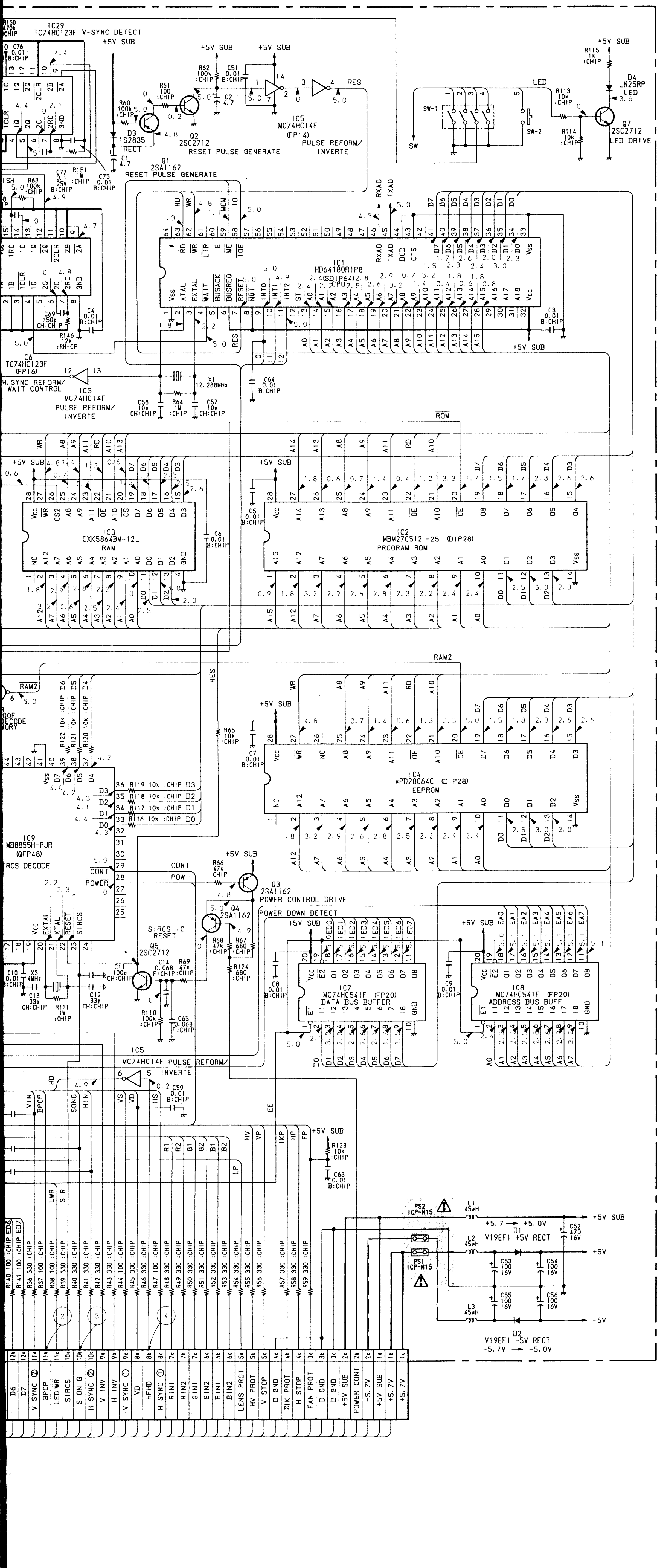

IC14 CXK5814P-45L (24 DIP 300 mil)
CHARACTER DISPLAY RAM
IC13
MB605195PF
(QFP120)
CHARACTER&TEST PATTERN GENERATE
IC17 CXK3864-042M
CHARACTER ROM NO. 3
IC16 CXK3864-041M
CHARACTER ROM NO. 2
IC15 CXK3864-040M
CHARACTER ROM NO. 1
IC10
MB670840PF
(QFP100)
ADDRESS ENCODE/PARALLEL INTERFACE
INTERRUPT CONTROL
IC22 μPC393G2(FP8)
WINDOW COMPERATOR
IC23 MC74F00M(FP14)
CLOCK SELECT/BUFFER
IC18 HD10124 (DSP16)
CHARACTER/TEST PATTERN SIGNAL
TTL > ECL TRANSLATION
IC19 HD10124 (DSP16)
CHARACTER SIGNAL TTL > ECL TRANSLATION
IC21 SN74S124N (DSP16)
DUAL VOLTAGE-CONTROLLED OSCILLATOR
IC20 CX23065A (SIP8)
DIGITAL PHASE COMPERATOR
IC25 μPC393G2 (1/2)
VOLTAGE COMPERATOR
CURRENT BUFFER
IC23 MC74F00M
CLOCK SELECT/BUFFER
VD SHIFT FOR CHARACTER GENERATE
PULSE REFORM/INVERTER
IC5 MC74HC14F
IC26 MC74HC00F
IC27 MC74HC107F
VD SHIFT FOR CHARACTER GENERATE
IC24 MC34051P (DIP16)
RS-422 LINE DRIVER/RECIVER
Y (CPU. MEMORY)
TO DM BOARD
DM-1


IC17 CXK3864-042M CHARACTER ROM NO. 3
IC16 CXK3864-041M CHARACTER ROM NO. 2
IC15 CXK3864-040M CHARACTER ROM NO. 1
IC12 MB671469PF (QFP64) FH, FV DETECT
IC11 MB654842UPF (QFP64) SYNC CONT/CLAMP PULSE GENERATE
IC10 MB670840PF (QFP100) ADDRESS ENCODE/PARALLEL INTERFACE/ INTERRUPT CONTROL
IC29 TC74HC123F V-SYNC DETECT
IC6 TC74HC123F (FP16) H SYNC REFORM/ WAIT CONTROL
IC5 MC74HC14F PULSE REFORM/ INVERTE
IC3 CXK5864BM-12L RAM
IC28 MC74HC00F ADDRESS DECODE FOR MEMORY
IC9 MB8855H-PJR (QFP48) SIRCS DECODE
IC18 HD10124 (DSP16) CHARACTER/TEST PATTERN SIGNAL TTL > ECL TRANSLATION
IC19 HD10124 (DSP16) CHARACTER SIGNAL TTL > ECL TRANSLATION
IC23 MC74F00M CLOCK SELECT/BUFFER
IC26 TC74HC00F
IC27 74HC107F
IC24 MC3405IP (DIP16) RS-422 LINE DRIVER/RECIVER
Q1 2SA1162 RESET PULSE GENERATE
Q2 2SC2712
Q5 2SC2712 SIRCS IC RESET
TO DM BOARD DM-1
RN GENERATE
VD SHIFT FOR CHARACTER GENERATE


IC29 TC74HC123F V-SYNC DETECT
IC12 MB671469PF (QFP64) FH, FV DETECT
IC11 MB654842UPF (QFP64)
IC6 TC74HC123F (FP16) H SYNC REFORM/ WAIT CONTROL
IC5 MC74HC14F PULSE REFORM/ INVERTE
Q2 2SC2712 RESET PULSE GENERATE
Q1 2SA1162 RESET PULSE GENERATE
IC1 HD64180R1P8 (SDIP64) CPU
IC3 CXK5864BM-12L RAM
IC2 MBM27C512-25 (DIP28) PROGRAM ROM
IC28 MC74HC00F ADDRESS DECODE FOR MEMORY
IC9 MB8855H-PJR (QFP48) SIRCS DECODE
IC4 μPD28C64C (DIP28) EEPROM
Q3 2SA1162 POWER CONTROL DRIVE
Q4 2SA1162 POWER DOWN DETECT
Q5 2SC2712 SIRCS IC RESET
IC7 MC74HC541F (FP20) DATA BUS BUFFER
IC8 MC74HC541F (FP20) ADDRESS BUS BUFF
Q7 2SC2712 LED DRIVE
D4 LN25RP LED
D1 V19EF1 +5V RECT
D2 V19EF1 -5V RECT

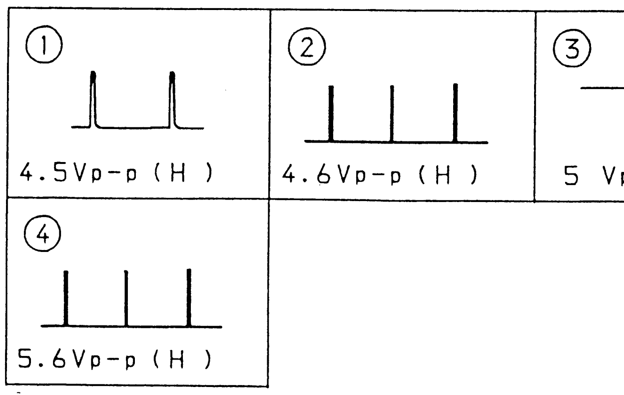


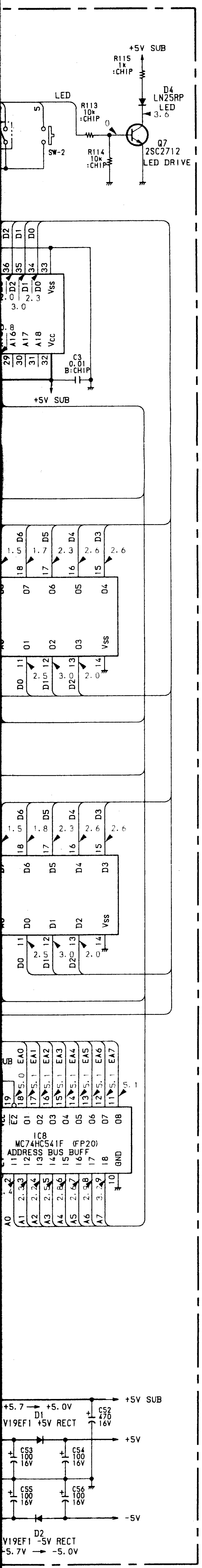
8
9
10
11
12
13
14
15
16
17
18
IC17 CXK3864-042M
CHARACTER ROM NO. 3
IC16 CXK3864-041M
CHARACTER ROM NO. 2
IC15 CXK3864-040M
CHARACTER ROM NO. 1
IC12
MB671469PF
(QFP64)
FH, FV DETECT
IC11
MB654842UPF
(QFP64)
SYNC CONT/CLAMP PULSE GENERATE
IC29
TC74HC123F V-SYNC DETECT
Q2
2SC2712
RESET PULSE GENERATE
Q1
2SA1162
RESET PULSE GENERATE
IC5
MC74HC14F
(FP14)
PULSE REFORM/
INVERTE
IC6
TC74HC123F
(FP16)
H. SYNC REFORM/
WAIT CONTROL
IC5
MC74HC14F
PULSE REFORM/
INVERTE
IC1
HD64180R1P8
IC3
CXK5864BM-12L
RAM
IC10
MB67084OPF
(QFP100)
ADDRESS ENCODE/PARALLEL INTERFACE/
INTERRUPT CONTROL
IC28
MC74HC00F
ADDRESS
DECODE
FOR MEMORY
IC23
MC74HC00F
ADDRESS DECODE
FOR MEMORY
IC9
MB88551H-PJR
(QFP48)
SIRCS DECODE
Q3
2SA1162
POWER CONTROL DRIVE
Q4
2SA1162
POWER DOWN DETECT
Q5
2SC2712
SIRCS IC
RESET
IC7
MC74HC541F
DATA BUS BUFFER
IC5
MC74HC14F PULSE REFORM/
INVERTE
X1
12.288MHz
X2
16MHz
+5V SUB



Y	IC1	HD64180R1P8	CPU
	2	MBM27C512-25	PROGRAM ROM
	3	CXK5864BM-12L	RAM
	4	μ PD28C64C-20	EEPROM
	5	MC74HC14F	PULSE REFORM/INVERTE
	6	TC74HC123F	H-SYNC REFORM/WAIT CONTROL
	7	MC74HC541F	DATA BUS BUFFER
	8	MC74HC541F	ADDRESS BUS BUFFER
	9	MB8855-PJR	SIRCS DECODE
	10	MB670840PF	ADDRESS ENCODE/PARALLEL INTERFAC /INTERRUPT CONTRO
	11	MB654842UPF	SYNC CONTROL/CLAMP PULSE GENERATE
	12	MB671469PF	fH, fv DETECT
	13	MB605195PF	CHARACTER & TEST PATTERN GENERA
	14	CXK5814P-45L	CHARACTER DISPLAY RAM
	15	CXK3864-040M	CHARACTER FONT ROM No.1
	16	CXK3864-041M	CHARACTER FONT ROM No.2
	17	CXK3864-042M	CHARACTER FONT ROM No.3
	18	HD10124	CHARACTER/TEST PATTERN SIGNAL T > ECL TRANSLATION
	19	HD10124	CHARACTER SIGNAL TTL > ECL TRANSLATION
	20	CX23065	DIGITAL PHASE COMPERATOR
	21	SN74S124N	DUAL VOLTAGE-CONTROLLED OSCILATO
	22	μ PC393G2	WINDOW COMPERATOR
	23	MC74F00M	CLOCK SELECT/BUFFER
	24	MC34051P	RS-422 LINE DRIVER/RECIVER
	25	μ PC393G2	VOLTAGE COMPERATOR
	26	MC74HC00F	VD SHIFT for CHARACTER GENERATE
	27	SN74HC107NS	VD SHIFT for CHARACTER GENERATE
	28	MC74HC00F	ADDRESS DECODE for MEMORY
	29	TC74HC123F	V-SYNC DETECT
	Q1	2SA1162-YG	RESET PULSE GENERATE
	2	2SC2712-YG	RESET PULSE GENERATE
	3	2SA1162-YG	POWER CONTROL DRIVE
	4	2SA1162-YG	POWER DOWN DETECT
	5	2SC2712-YG	SIRCS IC RESET
	6	2SC2712-YG	CURRENT BUFFER
	7	2SC2712-YG	LED DRIVE
	D1	V19EF1	+ 5.7V − − > + 5.0V
	2	V19EF1	− 5.7V − − > − 5.0V
	3	1S2835	RECTIFICATION
	4	LN25PR	LED
	5	1SS119	

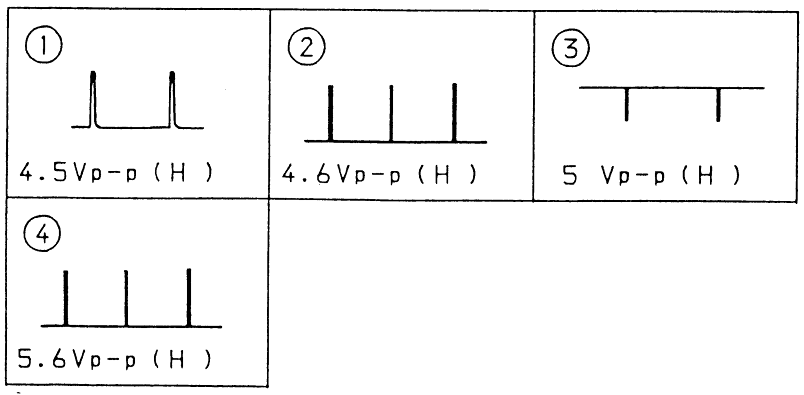
Y BOARD WAVEFORMS





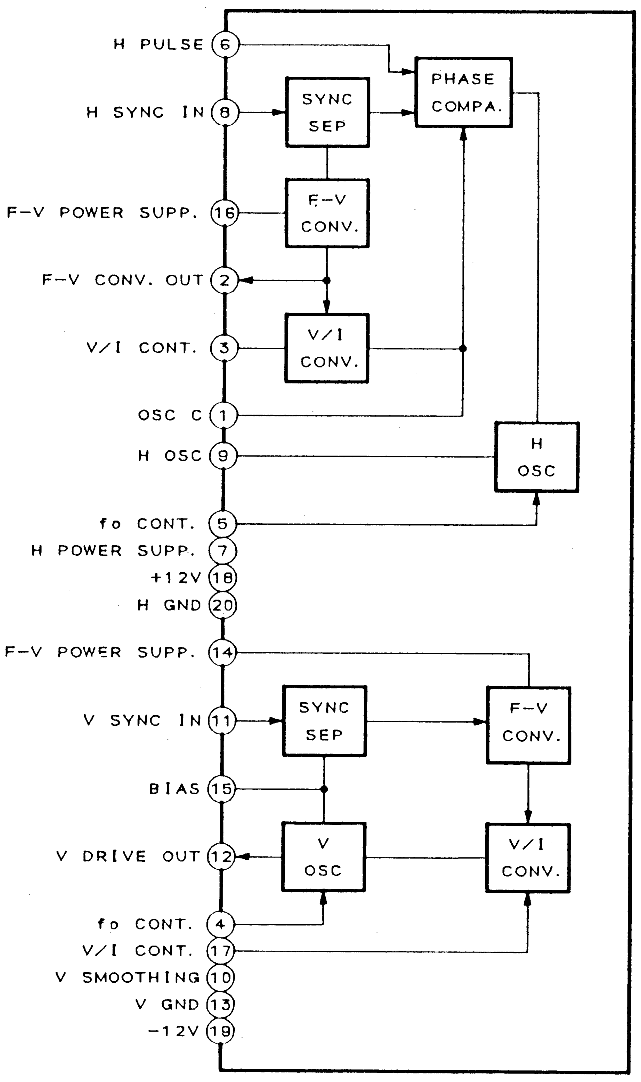
Y	IC1	HD64180R1P8	CPU
	2	MBM27C512-25	PROGRAM ROM
	3	CXK5864BM-12L	RAM
	4	μ PD28C64C-20	EEPROM
	5	MC74HC14F	PULSE REFORM/INVERTE
	6	TC74HC123F	H-SYNC REFORM/WAIT CONTROL
	7	MC74HC541F	DATA BUS BUFFER
	8	MC74HC541F	ADDRESS BUS BUFFER
	9	MB8855-PJR	SIRCS DECODE
	10	MB670840PF	ADDRESS ENCODE/PARALLEL INTERFACE /INTERRUPT CONTRO
	11	MB654842UPF	SYNC CONTROL/CLAMP PULSE GENERATE
	12	MB671469PF	fH, fv DETECT
	13	MB605195PF	CHARACTER & TEST PATTERN GENERATE
	14	CXK5814P-45L	CHARACTER DISPLAY RAM
	15	CXK3864-040M	CHARACTER FONT ROM No.1
	16	CXK3864-041M	CHARACTER FONT ROM No.2
	17	CXK3864-042M	CHARACTER FONT ROM No.3
	18	HD10124	CHARACTER/TEST PATTERN SIGNAL TTL > ECL TRANSLATION
	19	HD10124	CHARACTER SIGNAL TTL > ECL TRANSLATION
	20	CX23065	DIGITAL PHASE COMPERATOR
	21	SN74S124N	DUAL VOLTAGE-CONTROLLED OSCILATOR
	22	μ PC393G2	WINDOW COMPERATOR
	23	MC74F00M	CLOCK SELECT/BUFFER
	24	MC34051P	RS-422 LINE DRIVER/RECIVER
	25	μ PC393G2	VOLTAGE COMPERATOR
	26	MC74HC00F	VD SHIFT for CHARACTER GENERATE
	27	SN74HC107NS	VD SHIFT for CHARACTER GENERATE
	28	MC74HC00F	ADDRESS DECODE for MEMORY
	29	TC74HC123F	V-SYNC DETECT
	Q1	2SA1162-YG	RESET PULSE GENERATE
	2	2SC2712-YG	RESET PULSE GENERATE
	3	2SA1162-YG	POWER CONTROL DRIVE
	4	2SA1162-YG	POWER DOWN DETECT
	5	2SC2712-YG	SIRCS IC RESET
	6	2SC2712-YG	CURRENT BUFFER
	7	2SC2712-YG	LED DRIVE
	D1	V19EF1	+5.7V - - > +5.0V
	2	V19EF1	−5.7V - - > −5.0V
	3	1S2835	RECTIFICATION
	4	LN25PR	LED
	5	1SS119	

Y BOARD WAVEFORMS

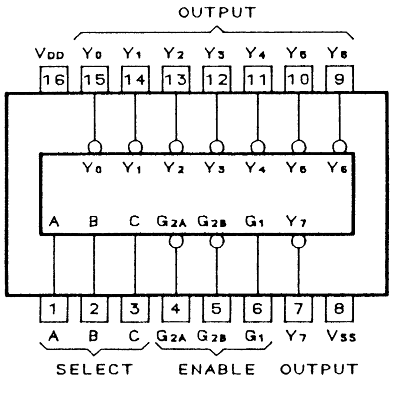


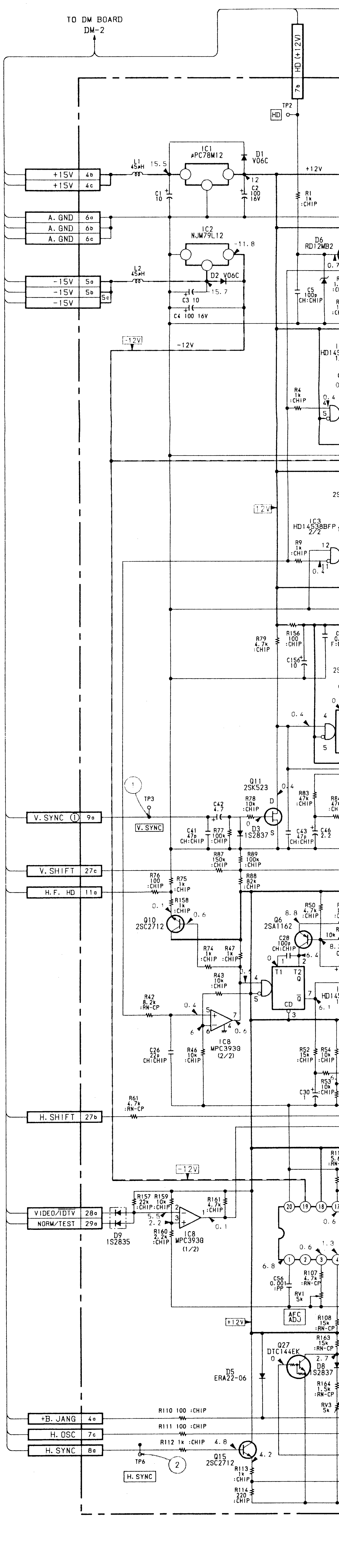
DA	IC1	μ PC78M12	+12V REG	24	2SA1162	SIZE MULTIPLEX-8
	2	μ PC79L12	−12V REG	25	DTC144EK	FAN PROT-1
	3	HD14538BFP	AD HD GEN	26	DTC144EK	FAN PROT-2
	4	μ PC4558G	AD HD LEVEL COMP	27	DTC144EK	VIDEO AFC SW-1
	5	HD14538BFP	H.BLK GEN	28	2SC2712	VIDEO AFC BIAS
	6	μ PC4558G	H.BLK LEVEL COMP	29	DTC144EK	VIDEO AFC SW-2
	8	μ PC393G	SW	30	DTC144EK	VIDEO AFC SW-3
	9	HD14538BFP	AFC HD GEN	31	FMW1	V.STOP PROT
	10	μ PC814G	AFC HD LEVEL COMP-1	201	2SC2712	HD BUFF-2
	11	HD14538BFP	V.SHIFT GEN	202	2SC2712	VD BUFF-2
	12	μ PC814G	V.SHIFT LEVEL COMP	203	2SC2712	1/2H BUFF
	13	HD14538BFP	PULSE GEN	204	2SC2712	1/2V BUFF
	14	SBX4011-01	JUNGLE	205	FMW2	V.SIN MULTIPLEX-1
	15	μ PC4558G	LEVEL SHIFT	206	IMX2	V.SIN MULTIPLEX-2
	16	μ PC814G	AFC HD LEVEL COMP-2	207	FMS2	V.SIN MULTIPLEX-3
	17	HD14053BFP	V.SYNC SW	208	FMW1	V.SIN MULTIPLEX-4
	201	CXA-1158P	REG1 WAVE GEN	209	FMW1	V.SIN MULTIPLEX-5
	202	HD74HC04BFP	PULSE INV.	210	IMX2	V.SIN MULTIPLEX-6
	203	μ PC814G	REG1 WAVE BUFF-1	211	2SC2712	V.SIN MULTIPLEX-7
	204	μ PC814G	REG1 WAVE BUFF-2	212	2SA1162	V.SIN MULTIPLEX-8
	205	μ PC814G	REG1 WAVE BUFF-3	213	FMW2	H.SIN MULTIPLEX-1
	206	μ PC814G	REG1 WAVE BUFF-4	214	IMX2	H.SIN MULTIPLEX-2
	207	μ PC814G	REG1 WAVE BUFF-5	215	FMS2	H.SIN MULTIPLEX-3
	208	μ PC4558G	V.SAW RECT	216	FMW1	H.SIN MULTIPLEX-4
	209	μ PC4558	V.PARA BIAS	217	FMW1	H.SIN MULTIPLEX-5
	210	HD14053BFP	WAVE DEVIDER	218	IMX2	H.SIN MULTIPLEX-6
	211	μ PC4558G	V.SIN BUFF	219	2SC2712	H.SIN MULTIPLEX-7
	213	μ PC814G	TILT BUFF-1	220	2SA1162	H.SIN MULTIPLEX-8
	214	μ PC814G	TILT BUFF-2	221	2SC2712	BLK BUFF-1
	215	μ PC814G	H.PARA BIAS	222	FMS1	TILT SW-1
	217	μ PC814G	H.SAW RECT	223	2SC2712	TILT SW-2
	218	HD14053BFP	H.SIN DEVIDER	224	FMS1	TILT SW-3
	219	μ PC814G	H.SIN BUFF	225	2SC2712	TILT SW-4
	220	μ PC814G	V.BLK SW	226	FMW1	TILT SW-5
	221	HD74HC138BFP	BLK MIX	227	2SA1162	TILT SW-6
	401	μ PC393G	H.BLK LEVEL DET	228	FMW1	TILT SW-7
				229	2SA1162	TILT SW-8
	Q1	2SC2712	HD BUFF-1	230	2SA1162	HD BUFF-3
	2	2SA1162	AD-HD BIAS	231	2SA1162	BLK BUFF-2
	3	2SC2712	AD-HD BUFF	401	2SC3668	+5.7V RIPPLE FILTER
	4	2SA1162	H.BLK BIAS-1	402	2SA1428	−5.7V RIPPLE FILTER
	5	2SA1162	H.BLK BIAS-2			
	6	2SA1162	H.SHIFT BIAS-1	D1	V06C	+12V REG PROT
	7	2SA1162	H.SHIFT BIAS-2	2	V06C	−12V REG PROT
	8	2SA1162	H.SHIFT BIAS-3	3	1S2837	V.SYNC CLAMP
	9	2SC2712	AFC HD BUFF	4	1S2837	BIAS-1
	10	2SC2712	H.F. HD BUFF	5	ERA22-06	AFC PROT
	11	2SK523	V.SYNC SW	6	RD12MB2	H.PULSE CLAMP
	12	2SA1162	V.SHIFT BIAS-1	7	RD10MB2	LIMIT
	13	2SA1162	V.SHIFT BIAS-2	8	1S2837	THERM CANCEL
	14	2SC2712	V.SYNC BUFF	9	1S2835	GATE
	15	2SC2712	H.SYNC BUFF	201	1SS123	V.SAW CLIP
	16	2SC2712	VD BUFF-1	202	1S2837	V.PARA RECT
	17	FMW2	SIZE MULTIPLEX-1	203	1S2837	BIAS-2
	18	IMX2	SIZE MULTIPLEX-2	204	1S2837	H.PARA RECT
	19	FMS2	SIZE MULTIPLEX-3	205	1SS123	H.SAW CLIP
	20	FMW1	SIZE MULTIPLEX-4	206	1S2837	BIAS-2
	21	FMW1	SIZE MULTIPLEX-5	207	1S2837	
	22	IMX2	SIZE MULTIPLEX-6	208	1S2837	
	23	2SC2712	SIZE MULTIPLEX-7			

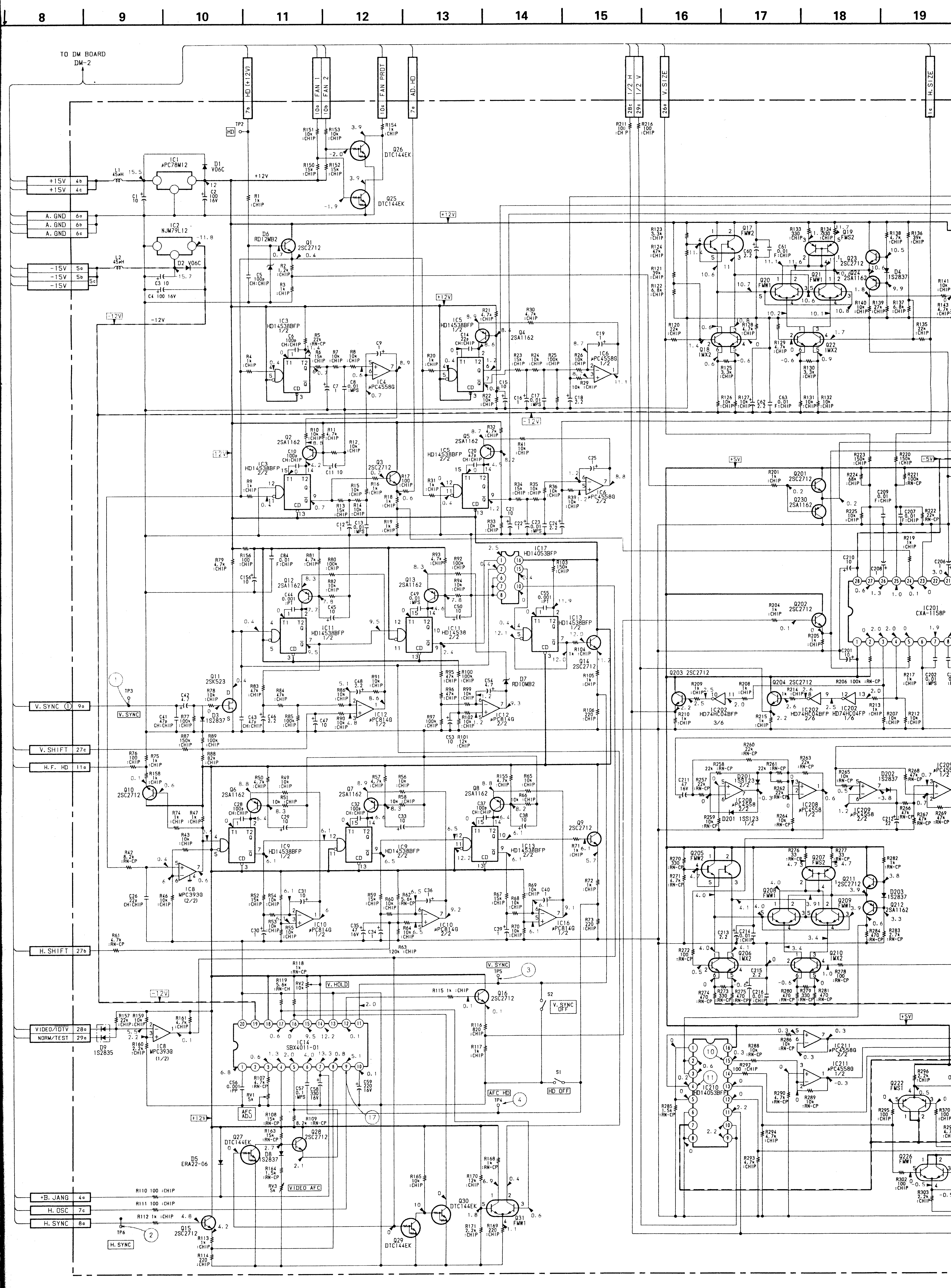
DA BOARD IC14 SBX-4011-01

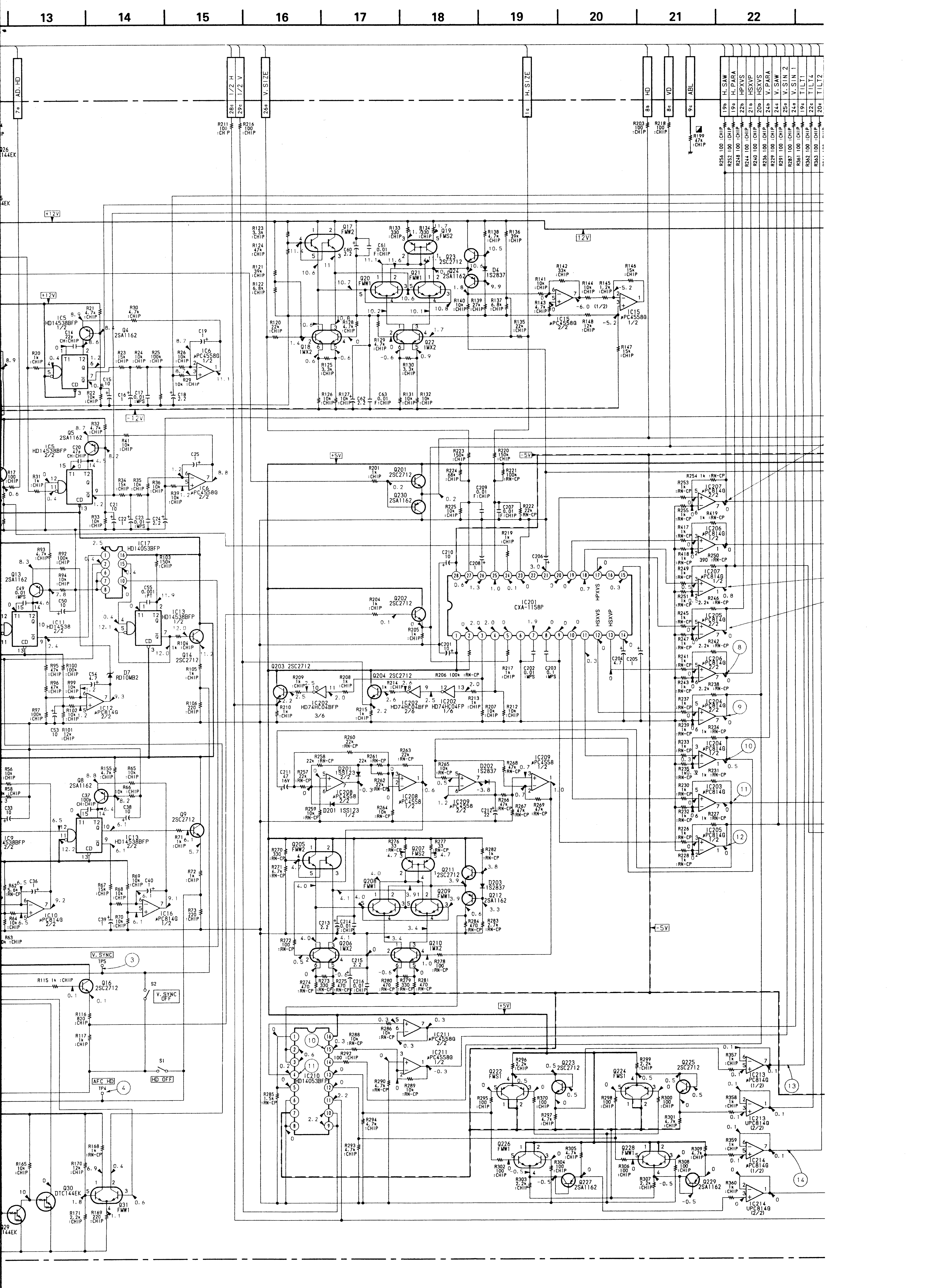


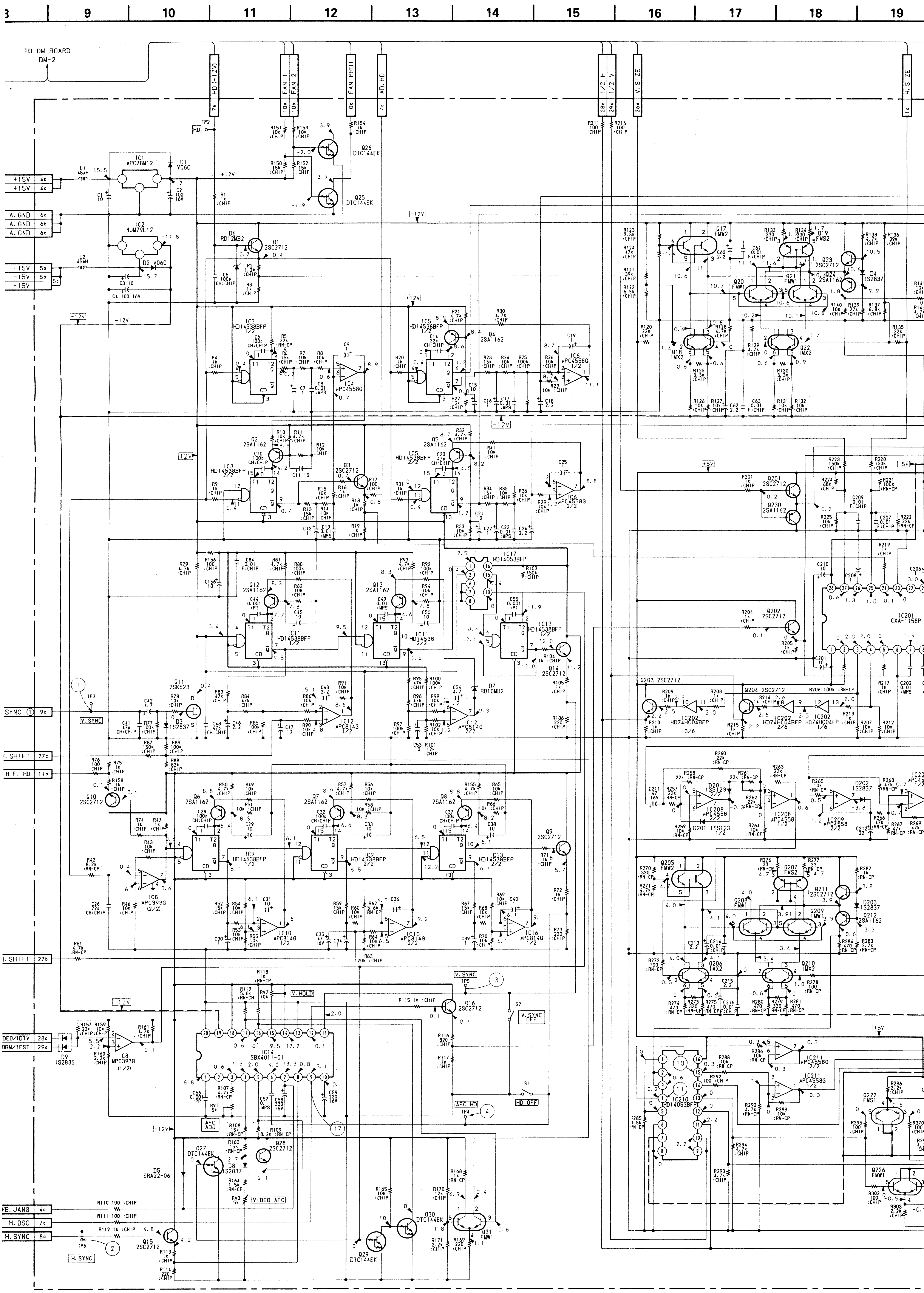
DA BOARD IC221 HD74HC138BFP



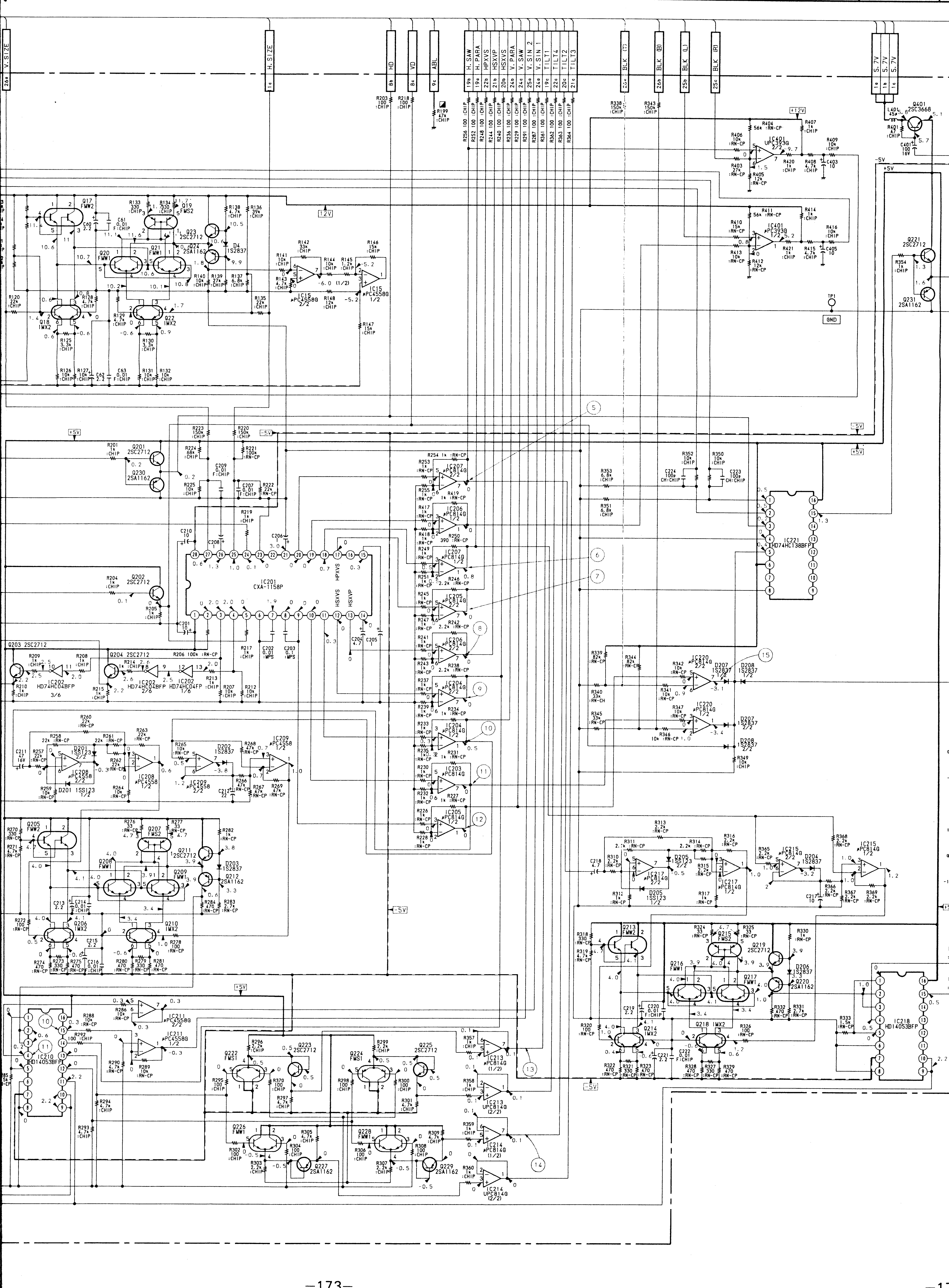


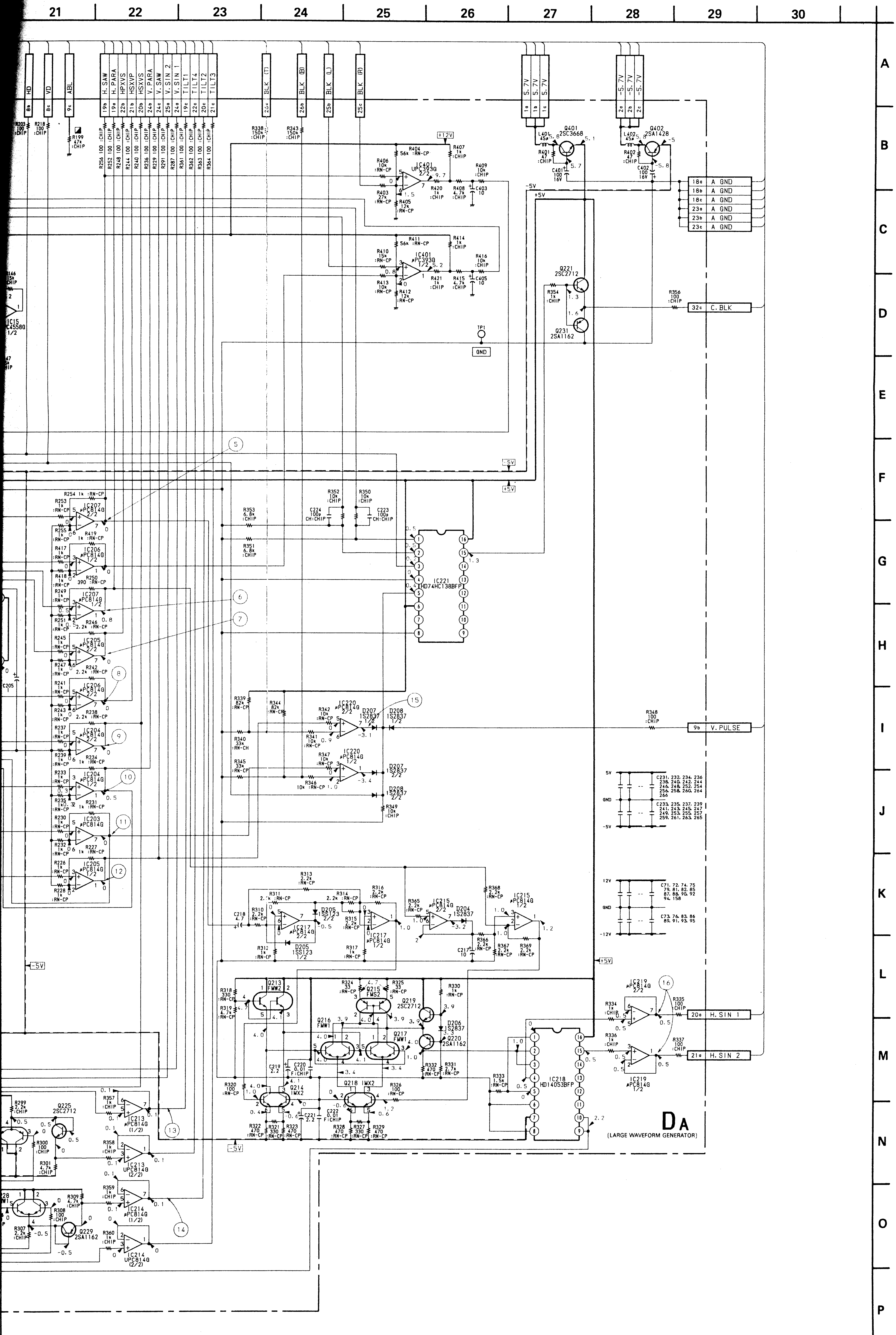

8
9
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11
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14
15
16
17
18
19
TO DM BOARD DM-2
HD (+12V)
FAN 1
FAN 2
FAN PROT
AD. HD
1/2 H
1/2 V
V. SIZE
H. SIZE
+15V
-15V
A. GND
IC1 μPC78M12
IC2 NJM79L12
IC3 HD14538BFP
IC4 μPC4558G
IC5 HD14538BFP
IC6 μPC4558G
IC8 MPC393G
IC9 HD14538BFP
IC10 μPC814G
IC11 HD14538BFP
IC12 μPC814G
IC13 HD14538BFP
IC14 SBX4011-01
IC16 μPC814G
IC17 HD14053BFP
IC201 CXA-1158P
IC202 HD74HC04BFP
IC208 μPC4558
IC209 μPC4558
IC210 HD14053BFP
IC211 μPC4558G
V. SYNC
V. SHIFT
H. F. HD
H. SHIFT
VIDEO/IDTV
NORM/TEST
+B. JANG
H. OSC
H. SYNC
V. HOLD
AFC ADJ
AFC HD
VIDEO AFC
V. SYNC OFF
HD OFF



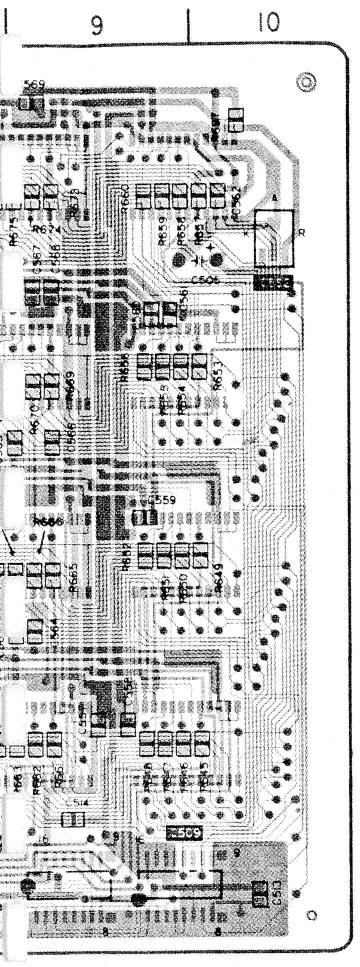

TO DM BOARD
DM-2
HD (+12V)
FAN 1
FAN 2
FAN PROT
AD. HD
1/2 H
1/2 V
V. SIZE
H. SIZE
+15V
-15V
A. GND
IC1 μPC78M12
IC2 NJM79L12
IC3 HD14538BFP
IC4 μPC4558G
IC5 HD14538BFP
IC6 μPC4558G
IC9 HD14538BFP
IC11 HD14538BFP
IC13 HD14538BFP
IC14 SBX4011-01
IC17 HD14053BFP
IC201 CXA-1158P
IC202 HD74HC04BFP
IC210 HD14053BFP
IC211 μPC4558G
V. SYNC
H. SYNC
V. HOLD
AFC ADJ
VIDEO AFC
AFC HD
HD OFF
V. SYNC OFF
H. OSC
B. JANG

16	17	18	19	20	21	22	23	24	25	26	27





DA
(LARGE WAVEFORM GENERATOR)
IC221 HD74HC138BFP
IC218 HD14053BFP
A GND
C.BLK
V.PULSE
H.SIN 1
H.SIN 2



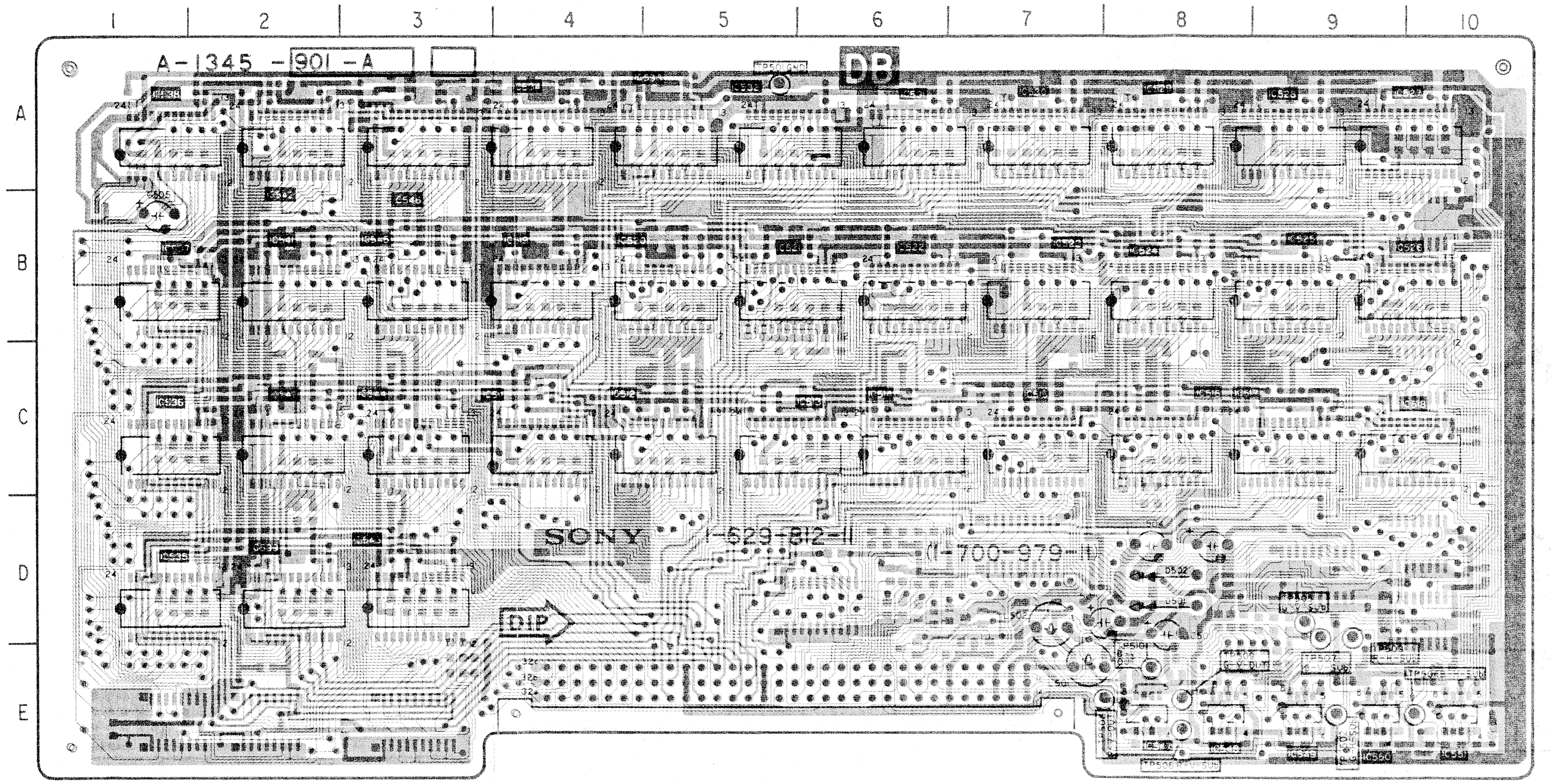
DB BOARD

IC	CONDUCTOR SIDE	COMPONENT SIDE
IC501	D－5	
IC502	D－4	
IC503	E－8	
IC504	D－2	
IC505	D－1	
IC506	D－1	
IC507	C－1	
IC508	B－1	
IC509	E－9	
IC510	E－9	
IC511		C－4
IC512		C－5
IC513		C－5
IC514		C－6
IC515		C－7
IC516		C－8
IC517		C－9
IC518		C－10
IC519		B－4
IC520		B－5
IC521		B－5
IC522		B－6
IC523		B－7
IC524		B－8
IC525		B－9
IC526		B－10
IC527		A－10
IC528		A－9
IC529		A－8
IC530		A－7
IC531		A－6
IC532		A－5
IC533		A－5
IC534		A－4
IC535		D－1
IC536		C－1
IC537		B－1
IC538		A－1
IC539		D－2
IC540		C－2
IC541		B－2
IC542		A－2
IC543		D－3
IC544		C－3
IC545		B－3
IC546		A－3
IC547		E－8
IC548		E－8
IC549		E－9
IC550		E－9
IC551		E－10
IC552	B－10	

DIODE	CONDUCTOR SIDE	COMPONENT SIDE
D501	D－3	D－8
D502	D－3	D－8
D503	E－3	
D504	E－3	
D505	E－3	
D506	D－4	
D507	D－4	
D508	E－5	

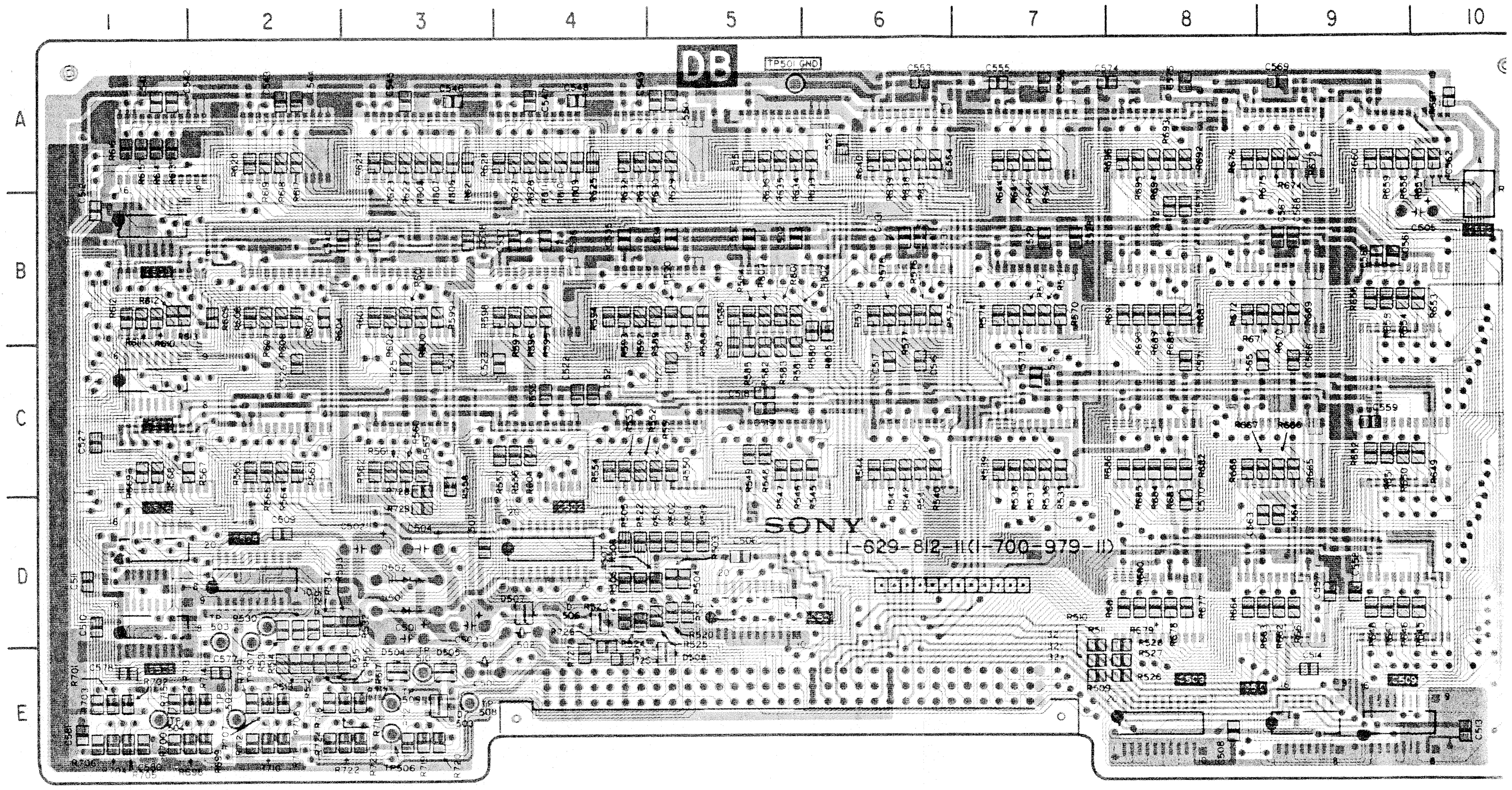
DB [ELECTRONIC VR]

– DB Board –



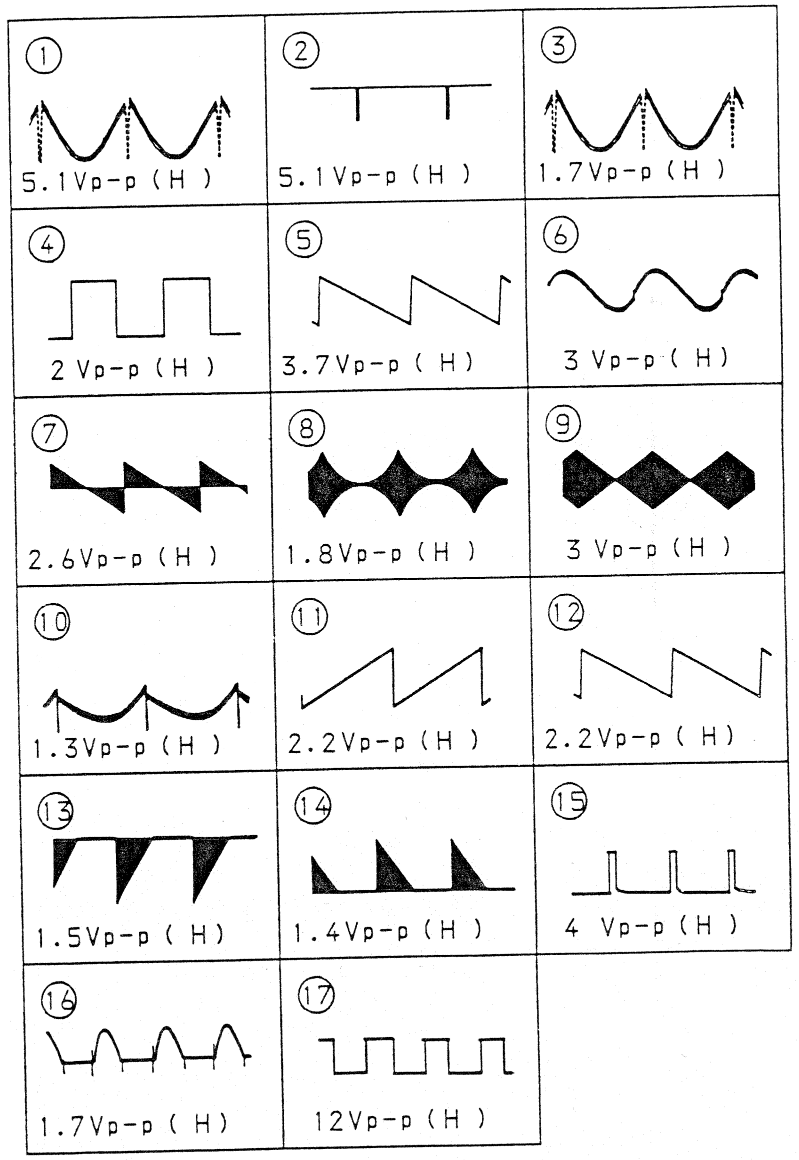
DB [ELECTRONIC VR]

– DB Board –

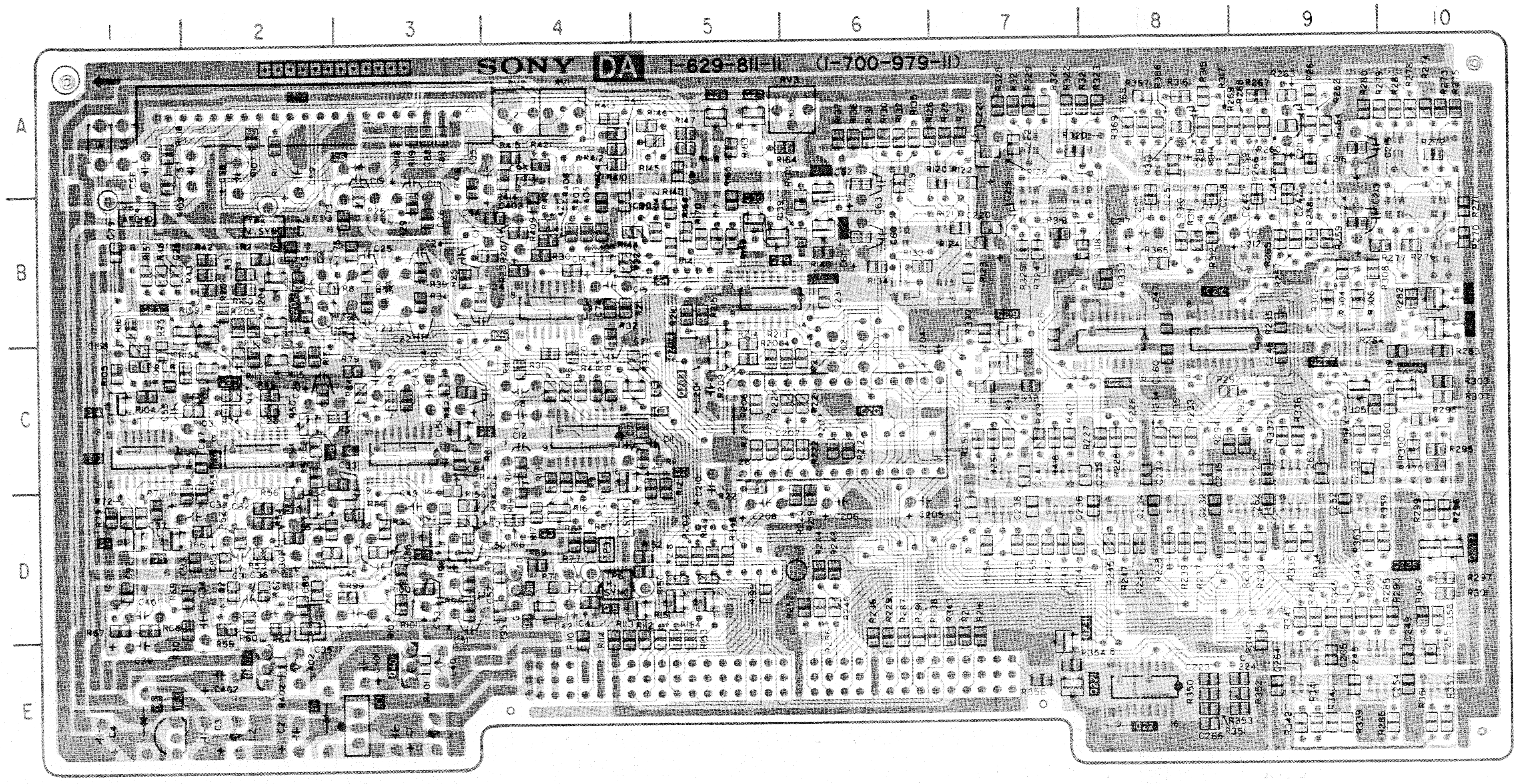


DA [LARGE WAVEFORM GENERATOR]

DA BOARD WAVEFOM



– DA Board – *(Conductor Side)*



IC1
IC2
IC3
IC4
IC5
IC6
IC8
IC9
IC10
IC11
IC12
IC13
IC14
IC15
IC16
IC17
IC201
IC202
IC203
IC204
IC205
IC206
IC207
IC208
IC209
IC210
IC211
IC213
IC214
IC215
IC217
IC218
IC219
IC220
IC221
IC401

Q1
Q2
Q3
Q4
Q5
Q6
Q7
Q8
Q9
Q10
Q11
Q12
Q13
Q14
Q15
Q16
Q17
Q18
Q19
Q20
Q21
Q22
Q23
Q24
Q25
Q26

DA [LARGE WAVEFORM GENERATOR]

DA BOARD

IC

	CONDUCTOR SIDE	COMPONENT SIDE
IC1	E-3	E-8
IC2	E-1	E-9
IC3	C-4	
IC4		B-9
IC5	B-4	
IC6		B-8
IC8		B-10
IC9	C-2	
IC10		D-9
IC11	C-3	
IC12		D-8
IC13	C-1	
IC14	A-2	A-8
IC15		A-6
IC16		D-10
IC17		B-10
IC201	C-6	C-5
IC202	B-5	
IC203		D-2
IC204		D-3
IC205		D-3
IC206		D-4
IC207		D-4
IC208		A-2
IC209		A-2
IC210	C-8	
IC211		E-1
IC213		E-1
IC214		D-1
IC215		A-3
IC217		A-2
IC218	C-8	
IC219		D-2
IC220		E-2
IC221	E-8	
IC401		A-7

	CONDUCTOR SIDE	COMPONENT SIDE
Q27	A-5	
Q28	A-5	
Q29	B-5	
Q30	B-5	
Q31		B-6
Q201	B-2	
Q202	B-2	
Q203	C-5	
Q204	B-5	
Q205		B-1
Q206		A-1
Q207		B-1
Q208		B-1
Q209		B-1
Q210		A-1
Q211	B-10	
Q212	B-10	
Q213		B-3
Q214		A-3
Q215		B-4
Q216		B-4
Q217		B-3
Q218		A-3
Q219	B-7	
Q220	C-7	
Q221	E-7	
Q222		C-1
Q223	D-10	
Q224		C-1
Q225	D-10	
Q226		B-2
Q227	C-9	
Q228		B-1
Q229	C-10	
Q230	B-2	
Q231	E-7	
Q401	E-3	E-8
Q402	E-2	E-9

TRANSISTOR

	CONDUCTOR SIDE	COMPONENT SIDE
Q1	B-2	
Q2	C-4	
Q3	D-4	
Q4	B-4	
Q5	C-5	
Q6	C-2	
Q7	D-2	
Q8	D-1	
Q9	D-1	
Q10	C-2	
Q11	D-4	D-7
Q12	C-3	
Q13	D-3	
Q14	C-1	
Q15	D-5	
Q16	B-2	
Q17		B-4
Q18		A-4
Q19		B-5
Q20		B-5
Q21		B-4
Q22		A-5
Q23	B-6	
Q24	B-6	
Q25	D-5	
Q26	D-5	

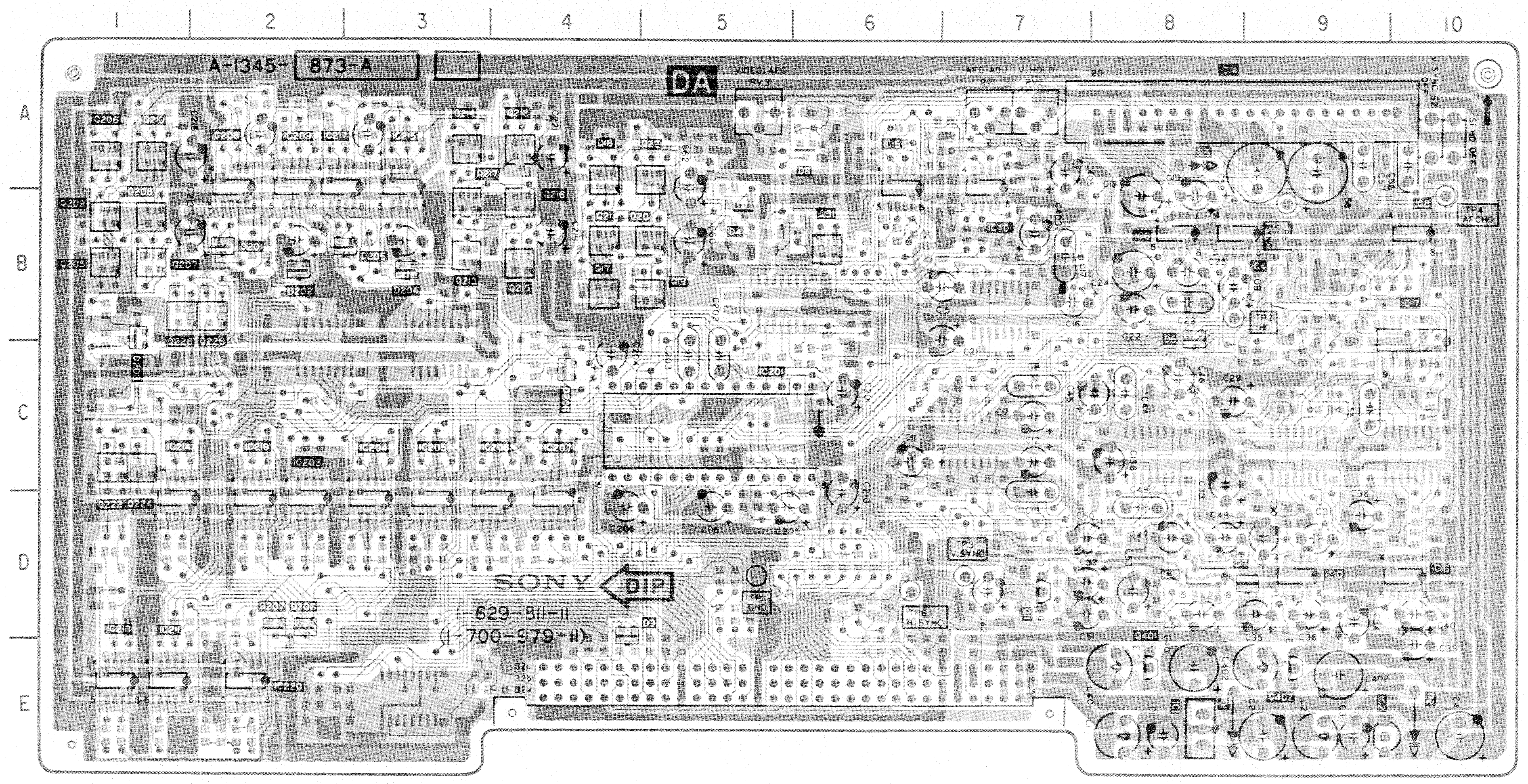
DIODE

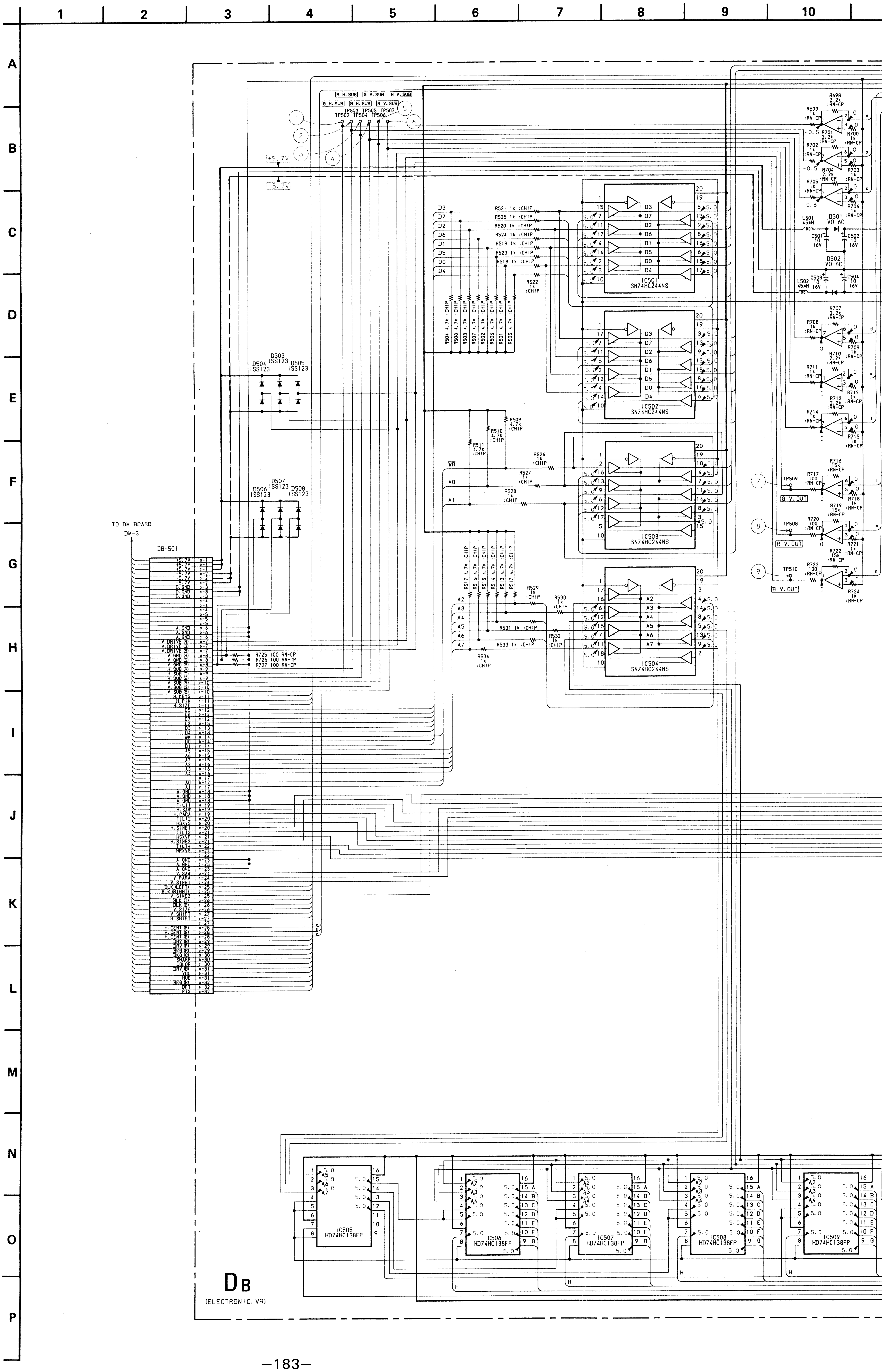
	CONDUCTOR SIDE	COMPONENT SIDE
D1	E-2	E-8
D2	E-1	E-10
D3	D-4	
D4		B-5
D5	A-3	A-8
D6		B-8
D7		D-9
D8		A-6
D9		D-4
D201		B-2
D202		B-2
D203		C-1
D204		B-3
D205		B-3
D206		C-4
D207		D-2
D208		D-2

VARIABLE RESISTOR

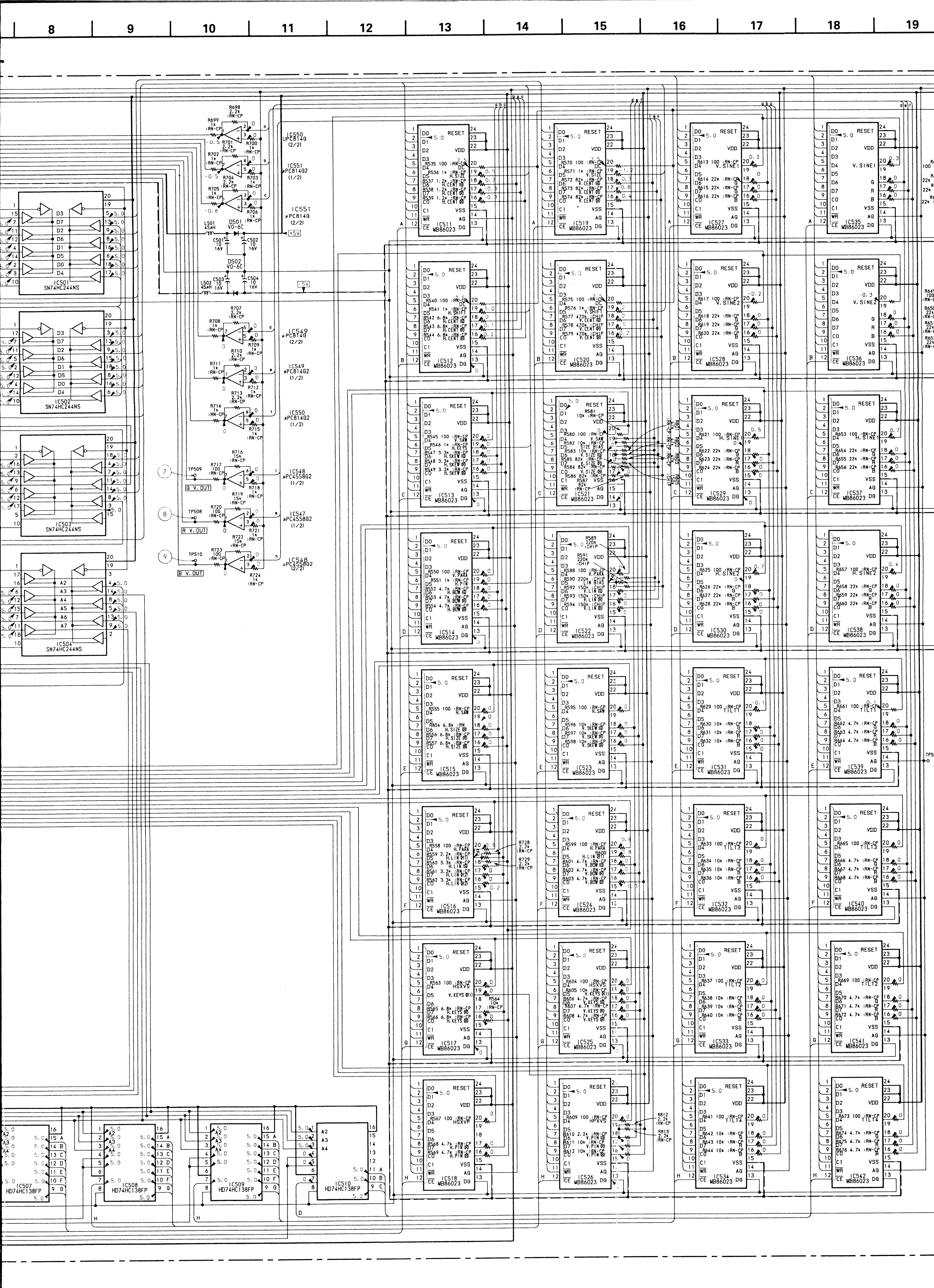
	CONDUCTOR SIDE	COMPONENT SIDE
RV1	A-4	A-7
RV2	A-4	A-7
RV3	A-6	A-5

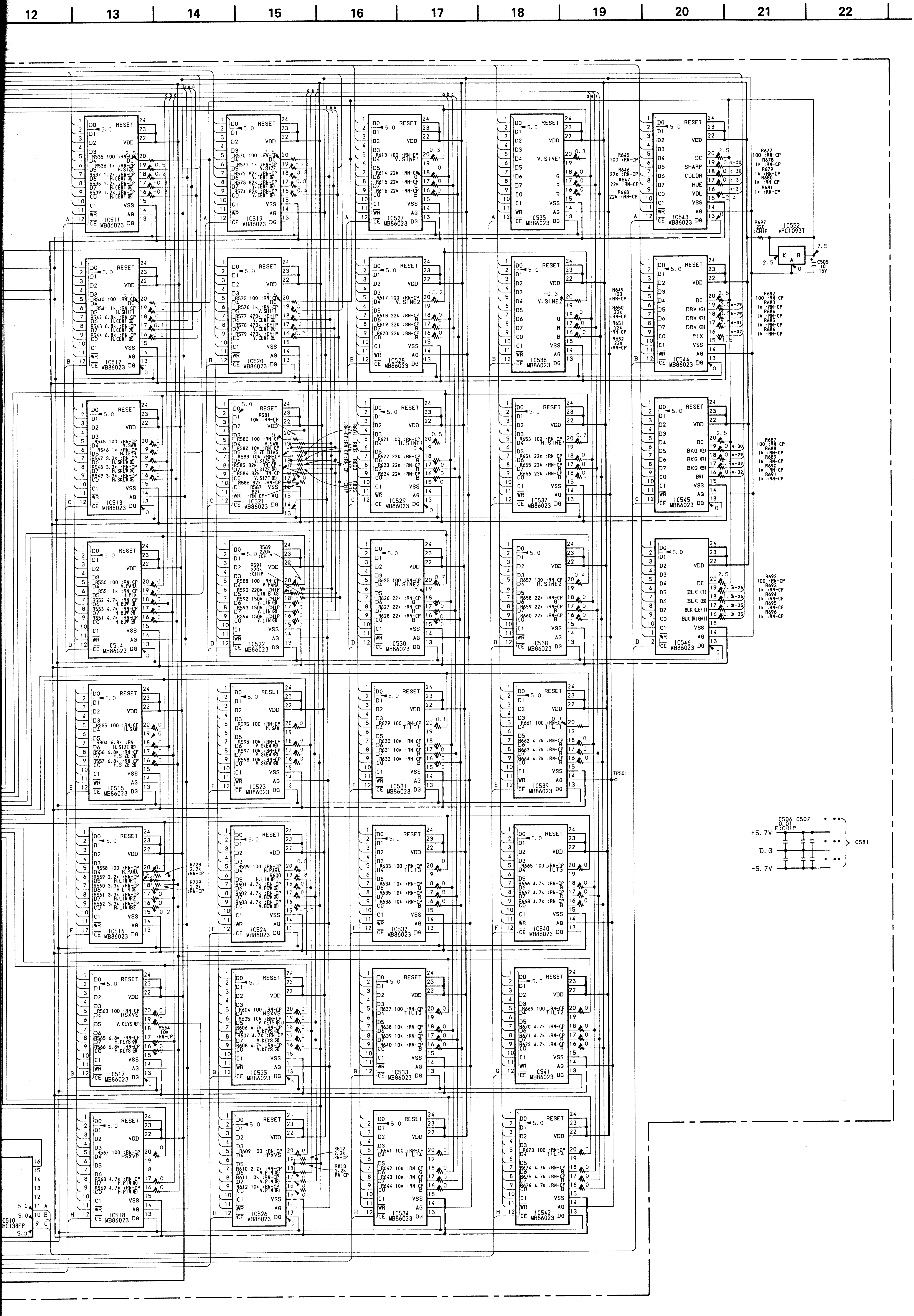
– DA Board – *(Conponent Side)*

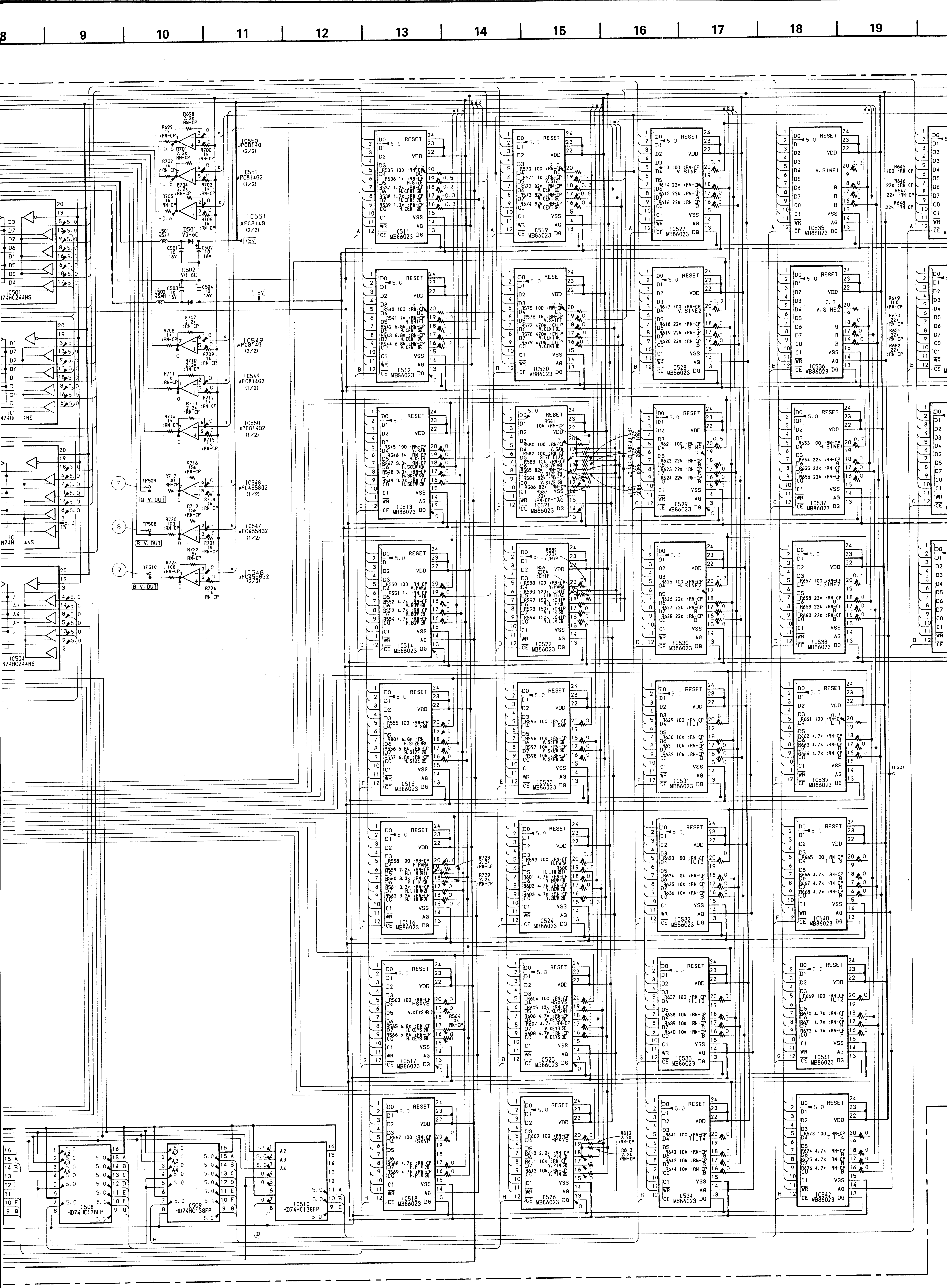


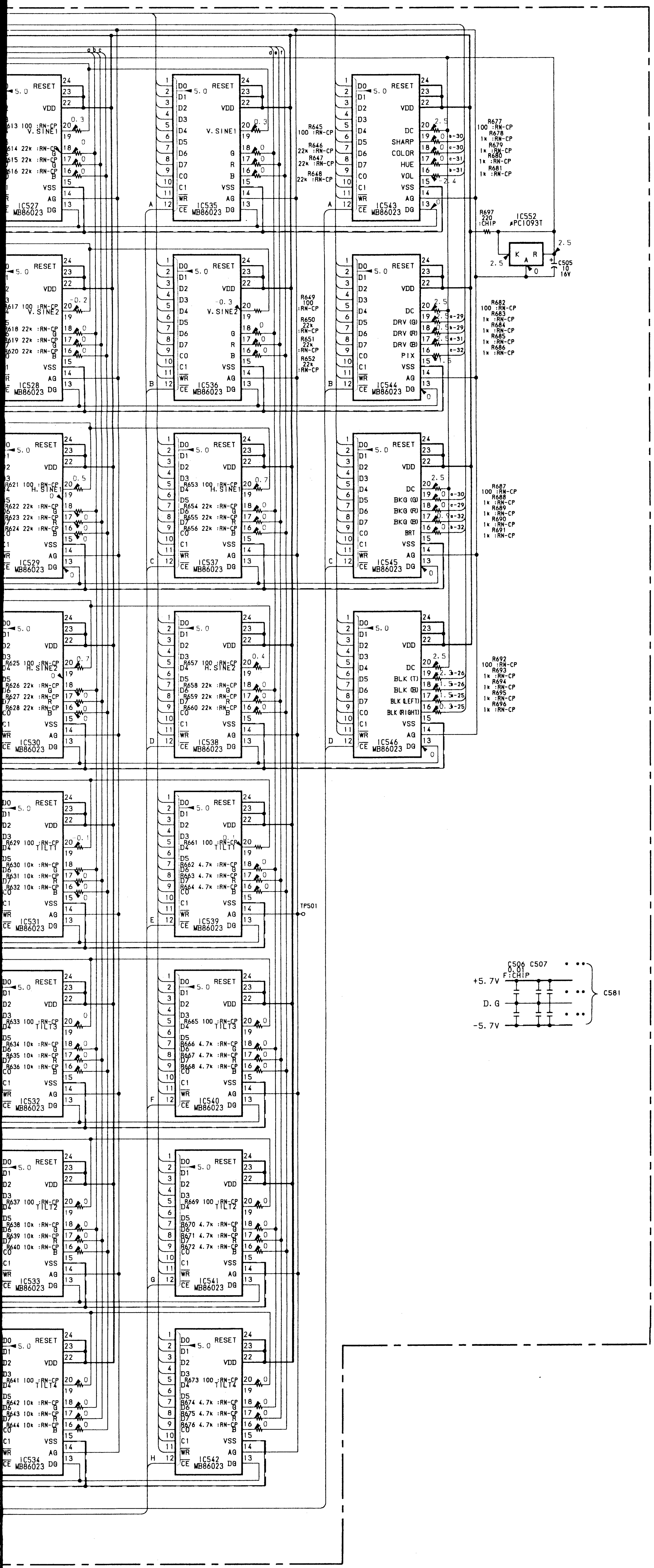


TO DM BOARD
DM-3
DB-501
IC501
SN74HC244NS
IC502
SN74HC244NS
IC503
SN74HC244NS
IC504
SN74HC244NS
IC505
HD74HC138FP
IC506
HD74HC138FP
IC507
HD74HC138FP
IC508
HD74HC138FP
IC509
HD74HC138FP
D503 1SS123
D504 1SS123
D505 1SS123
D506 1SS123
D507 1SS123
D508 1SS123
R725 100 RN-CP
R726 100 RN-CP
R727 100 RN-CP
G V. OUT
R V. OUT
B V. OUT
DB
(ELECTRONIC. VR)



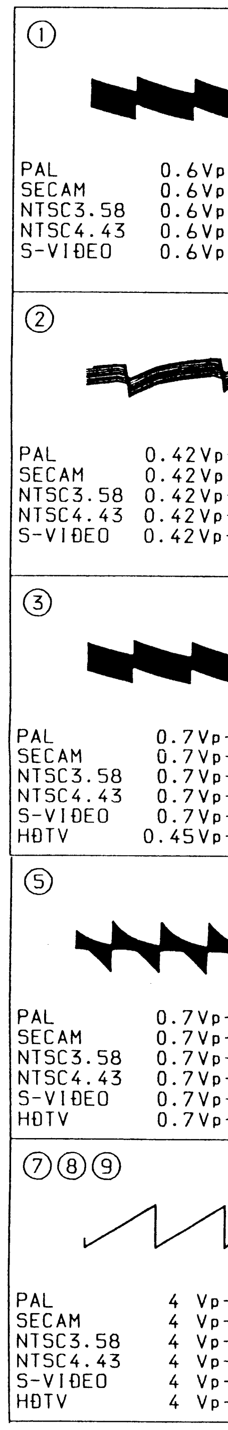




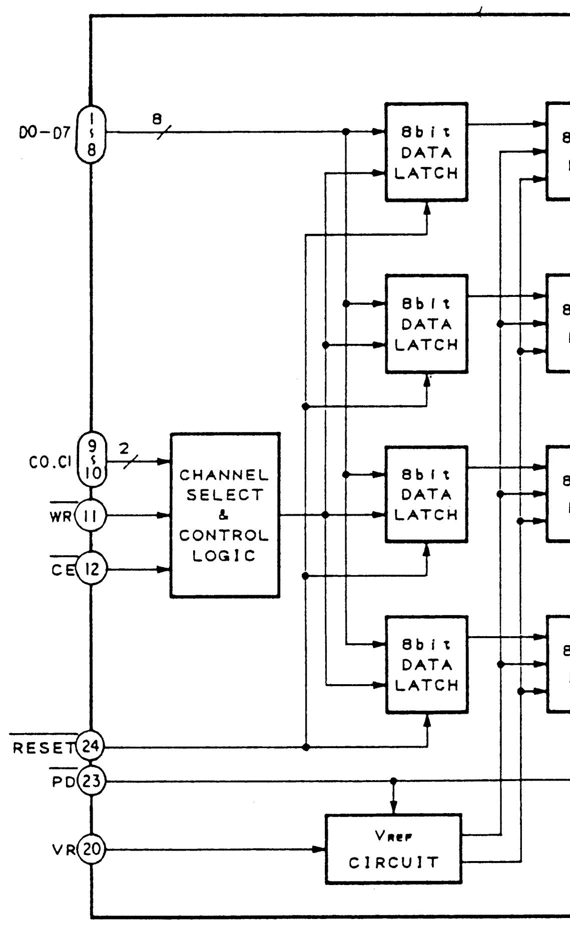


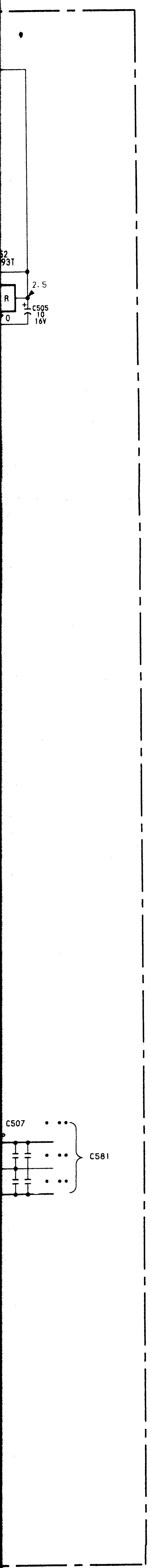
DB	IC501	HD74HC244FP	DATA BAS BUFF-1
	502	HD74HC244FP	DATA BAS BUFF-2
	503	HD74HC244FP	ADD BAS BUFF-1
	504	HD74HC244FP	ADD BAS BUFF-2
	505	HD74HC138FP	ADD DECODE-1
	506	HD74HC138FP	ADD DECODE-2
	507	HD74HC138FP	ADD DECODE-3
	508	HD74HC138FP	ADD DECODE-4
	509	HD74HC138FP	ADD DECODE-5
	510	HD74HC138FP	ADD DECODE-6
	511	MB86023	H.CENT CONT-1
	512	MB86023	H.CENT CONT-2
	513	MB86023	H.SKEW CONT
	514	MB86023	H.BOW CONT
	515	MB86023	H.SIZE CONT
	516	MB86023	H.LIN CONT
	517	MB86023	H.KEYS CONT
	518	MB86023	H.PIN CONT
	519	MB86023	V.CENT CONT-1
	520	MB86023	V.CENT CONT-2
	521	MB86023	V.SIZE CONT
	522	MB86023	V.LIN CONT
	523	MB86023	V.SKEW CONT
	524	MB86023	V.BOW CONT
	525	MB86023	V.KEYS CONT
	526	MB86023	V.PIN CONT
	527	MB86023	H.ZONE-2 CONT
	528	MB86023	H.ZONE-3 CONT
	529	MB86023	H.ZONE-4 CONT
	530	MB86023	H.ZONE-5 CONT
	531	MB86023	H.ZONE-6 CONT
	532	MB86023	H.ZONE-7 CONT
	533	MB86023	H.ZONE-8 CONT
	534	MB86023	H.ZONE-9 CONT
	535	MB86023	V.ZONE-2 CONT
	536	MB86023	V.ZONE-3 CONT
	537	MB86023	V.ZONE-4 CONT
	538	MB86023	V.ZONE-5 CONT
	539	MB86023	V.ZONE-6 CONT
	540	MB86023	V.ZONE-7 CONT
	541	MB86023	V.ZONE-8 CONT
	542	MB86023	V.ZONE-9 CONT
	543	MB86023	USER CONT
	544	MB86023	DRV CONT
	545	MB86023	BKG CONT
	546	MB86023	BLK CONT
	547	µ PC4558G	V.OUT BUFF-1
	548	µ PC4558G	V.OUT BUFF-2
	549	µ PC814G	SUB OUT BUFF-1
	550	µ PC814G	SUB OUT BUFF-2
	551	µ PC814G	SUB OUT BUFF-3
	552	µ PC1093T	STAND VOLT REG
	D501	V06C	LEVEL SHIFT-1
	502	V06C	LEVEL SHIFT-2
	503	1SS123	PROT-1
	504	1SS123	PROT-2
	505	1SS123	PROT-3
	506	1SS123	PROT-4
	507	1SS123	PROT-5
	508	1SS123	PROT-6

DB BOARD WAVE



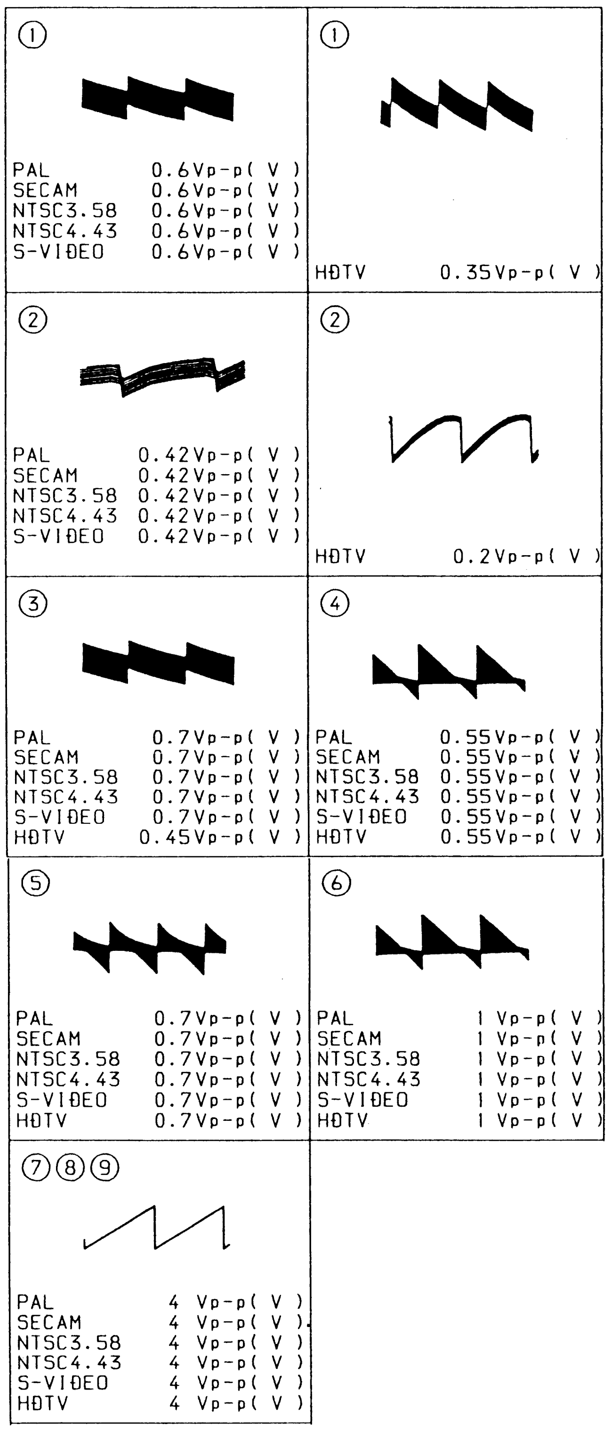
DB BOARD IC511 MB86023



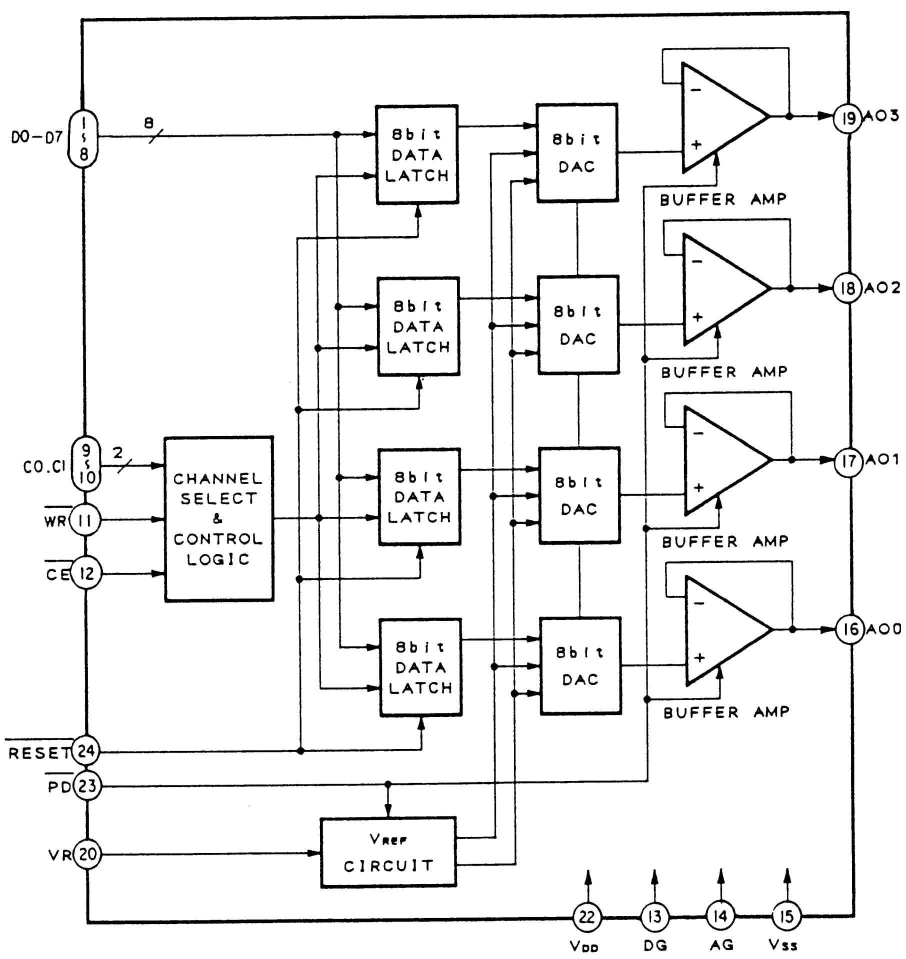


Board	Ref.	Part	Function
DB	IC501	HD74HC244FP	DATA BAS BUFF-1
	502	HD74HC244FP	DATA BAS BUFF-2
	503	HD74HC244FP	ADD BAS BUFF-1
	504	HD74HC244FP	ADD BAS BUFF-2
	505	HD74HC138FP	ADD DECODE-1
	506	HD74HC138FP	ADD DECODE-2
	507	HD74HC138FP	ADD DECODE-3
	508	HD74HC138FP	ADD DECODE-4
	509	HD74HC138FP	ADD DECODE-5
	510	HD74HC138FP	ADD DECODE-6
	511	MB86023	H.CENT CONT-1
	512	MB86023	H.CENT CONT-2
	513	MB86023	H.SKEW CONT
	514	MB86023	H.BOW CONT
	515	MB86023	H.SIZE CONT
	516	MB86023	H.LIN CONT
	517	MB86023	H.KEYS CONT
	518	MB86023	H.PIN CONT
	519	MB86023	V.CENT CONT-1
	520	MB86023	V.CENT CONT-2
	521	MB86023	V.SIZE CONT
	522	MB86023	V.LIN CONT
	523	MB86023	V.SKEW CONT
	524	MB86023	V.BOW CONT
	525	MB86023	V.KEYS CONT
	526	MB86023	V.PIN CONT
	527	MB86023	H.ZONE-2 CONT
	528	MB86023	H.ZONE-3 CONT
	529	MB86023	H.ZONE-4 CONT
	530	MB86023	H.ZONE-5 CONT
	531	MB86023	H.ZONE-6 CONT
	532	MB86023	H.ZONE-7 CONT
	533	MB86023	H.ZONE-8 CONT
	534	MB86023	H.ZONE-9 CONT
	535	MB86023	V.ZONE-2 CONT
	536	MB86023	V.ZONE-3 CONT
	537	MB86023	V.ZONE-4 CONT
	538	MB86023	V.ZONE-5 CONT
	539	MB86023	V.ZONE-6 CONT
	540	MB86023	V.ZONE-7 CONT
	541	MB86023	V.ZONE-8 CONT
	542	MB86023	V.ZONE-9 CONT
	543	MB86023	USER CONT
	544	MB86023	DRV CONT
	545	MB86023	BKG CONT
	546	MB86023	BLK CONT
	547	μ PC4558G	V.OUT BUFF-1
	548	μ PC4558G	V.OUT BUFF-2
	549	μ PC814G	SUB OUT BUFF-1
	550	μ PC814G	SUB OUT BUFF-2
	551	μ PC814G	SUB OUT BUFF-3
	552	μ PC1093T	STAND VOLT REG
	D501	V06C	LEVEL SHIFT-1
	502	V06C	LEVEL SHIFT-2
	503	1SS123	PROT-1
	504	1SS123	PROT-2
	505	1SS123	PROT-3
	506	1SS123	PROT-4
	507	1SS123	PROT-5
	508	1SS123	PROT-6

DB BOARD WAVEFORMS



DB BOARD IC511 MB86023

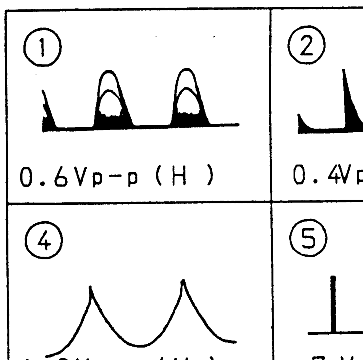


1 2 3 4 5 6 7 8 9 10 1

A B C D E F G H I J K L M N O P

DD	IC1	HD14538BFP	PULSE GEN
	2 (1/2)	μ PC814G	COMPARAT
	2 (2/2)	μ PC814G	AMP
	3	CXA1158P	H.PARA GE
	4 (1/2)	μ PC814G2	WAVE COM
	4 (2/2)	μ PC814G2	WAVE COM
	Q1	2SC3668	+ 5V RIPPL
	2	2SA1428	− 5V RIPPL
	3	FMS2	CONSTANT
	4	FMS2	CONSTANT
	11	FMW2	MULTIPLICA
	12	IMX2	MULTIPLICA
	13	FMS2	MULTIPLICA
	14	FMW1	MULTIPLICA
	15	IMX2	MULTIPLICA
	16	FMS1	ANALOG S
	17	FMS1	ANALOG S
	18	FMS1	ANALOG S
	19	FMW2	MULTIPLICA
	20	IMX2	MULTIPLICA
	21	FMW1	MULTIPLICA
	22	FMS2	MULTIPLICA
	23	IMX2	MULTIPLICA
	24	FMS1	ANALOG S
	25	FMS1	ANALOG S
	26	FMS1	ANALOG S
	27	FMW2	MULTIPLICA
	28	IMX2	MULTIPLICA
	29	FMW1	MULTIPLICA
	30	FMS2	MULTIPLICA
	31	IMX2	MULTIPLICA
	32	FMS1	ANALOG S
	33	FMS1	ANALOG S
	34	FMS1	ANALOG S
	35	IMX2	PULSE GE
	36	FMW1	PULSE GE
	37	FMW1	PULSE GE

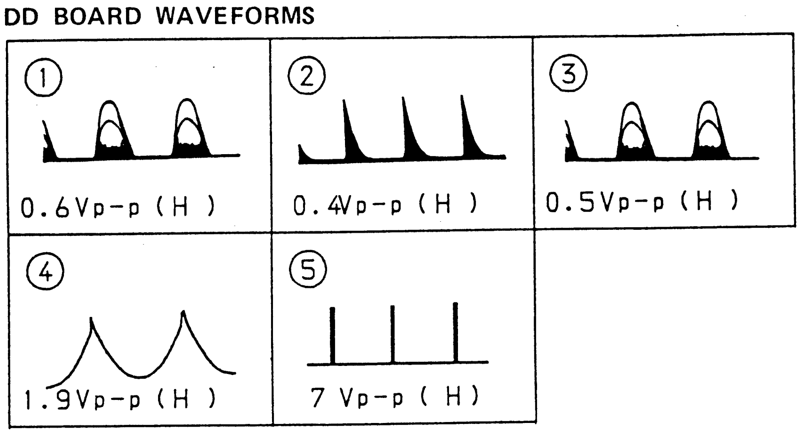
DD BOARD WAVEFORMS

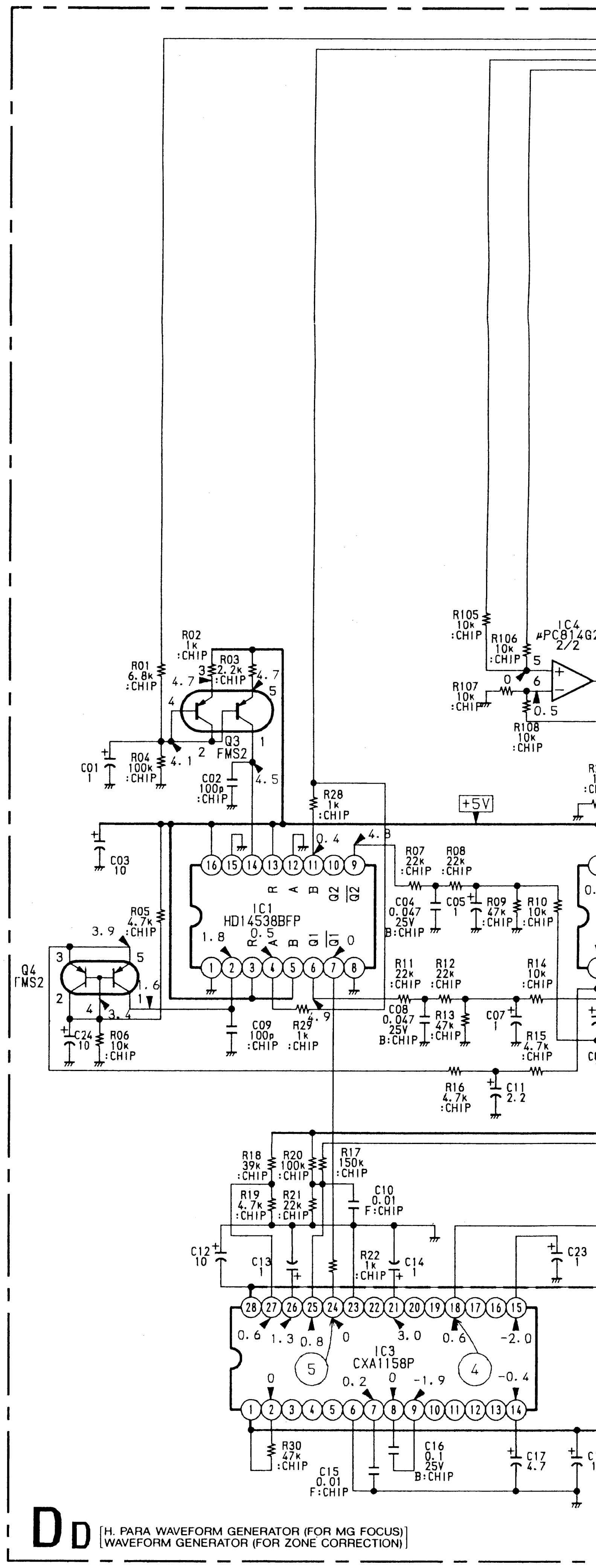


8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19

DD			
	IC1	HD14538BFP	PULSE GENERATOR (For PHASE SHIFT)
	2 (1/2)	µ PC814G	COMPARATOR • INTEGRAL
	2 (2/2)	µ PC814G	AMP
	3	CXA1158P	H.PARA GENERATOR (For Mg FOCUS)
	4 (1/2)	µ PC814G2	WAVE COMPOSITION (V SIN1, V SIN2)
	4 (2/2)	µ PC814G2	WAVE COMPOSITION (H SIN1, H SIN2)
	Q1	2SC3668	+ 5V RIPPLE FILTER
	2	2SA1428	− 5V RIPPLE FILTER
	3	FMS2	CONSTANT CURRENT
	4	FMS2	CONSTANT CURRENT
	11	FMW2	MULTIPLICATIVE INST (H.PARA x V SIN)
	12	IMX2	MULTIPLICATIVE INST (H.PARA x V SIN)
	13	FMS2	MULTIPLICATIVE INST (H.PARA x V SIN)
	14	FMW1	MULTIPLICATIVE INST (H.PARA x V SIN)
	15	IMX2	MULTIPLICATIVE INST (H.PARA x V SIN)
	16	FMS1	ANALOG SW
	17	FMS1	ANALOG SW
	18	FMS1	ANALOG SW
	19	FMW2	MULTIPLICATIVE INST (H.SIN x V.PARA)
	20	IMX2	MULTIPLICATIVE INST (H.SIN x V.PARA)
	21	FMW1	MULTIPLICATIVE INST (H.SIN x V.PARA)
	22	FMS2	MULTIPLICATIVE INST (H.SIN x V.PARA)
	23	IMX2	MULTIPLICATIVE INST (H.SIN x V.PARA)
	24	FMS1	ANALOG SW
	25	FMS1	ANALOG SW
	26	FMS1	ANALOG SW
	27	FMW2	MULTIPLICATIVE INST (H.SIN x V.SIN)
	28	IMX2	MULTIPLICATIVE INST (H.SIN x V.SIN)
	29	FMW1	MULTIPLICATIVE INST (H.SIN x V.SIN)
	30	FMS2	MULTIPLICATIVE INST (H.SIN x V.SIN)
	31	IMX2	MULTIPLICATIVE INST (H.SIN x V.SIN)
	32	FMS1	ANALOG SW
	33	FMS1	ANALOG SW
	34	FMS1	ANALOG SW
	35	IMX2	PULSE GEN (For SWITCHING)
	36	FMW1	PULSE GEN (For SWITCHING)
	37	FMW1	PULSE GEN (For SWITCHING)

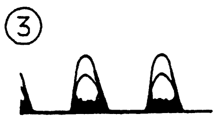
DD BOARD WAVEFORMS

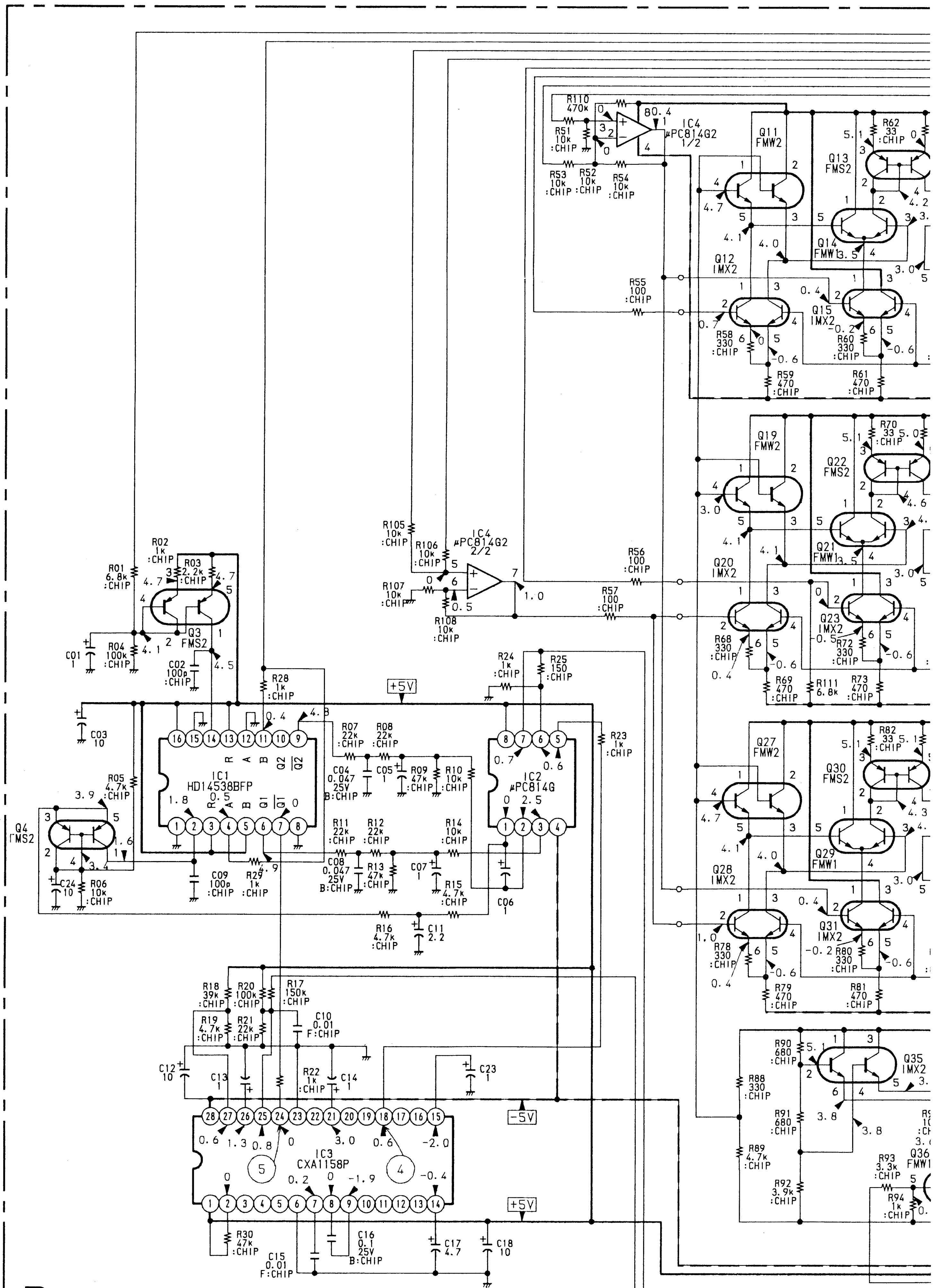




PHASE SHIFT)
Mg FOCUS)
IN1, V SIN2)
IN1, H SIN2)
PARA x V SIN)
PARA x V SIN)
PARA x V SIN)
PARA x V SIN)
PARA x V SIN)
SIN x V.PARA)
SIN x V.PARA)
SIN x V.PARA)
SIN x V.PARA)
SIN x V.PARA)
SIN x V.SIN)
SIN x V.SIN)
SIN x V.SIN)
SIN x V.SIN)
SIN x V.SIN)
NG)
NG)
NG)

③

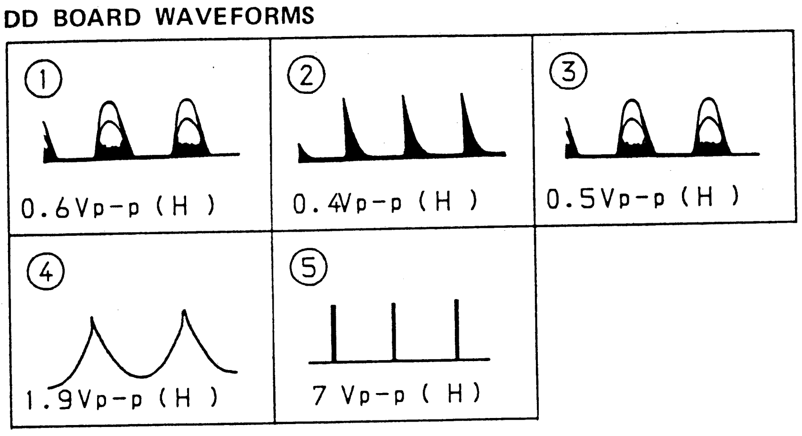


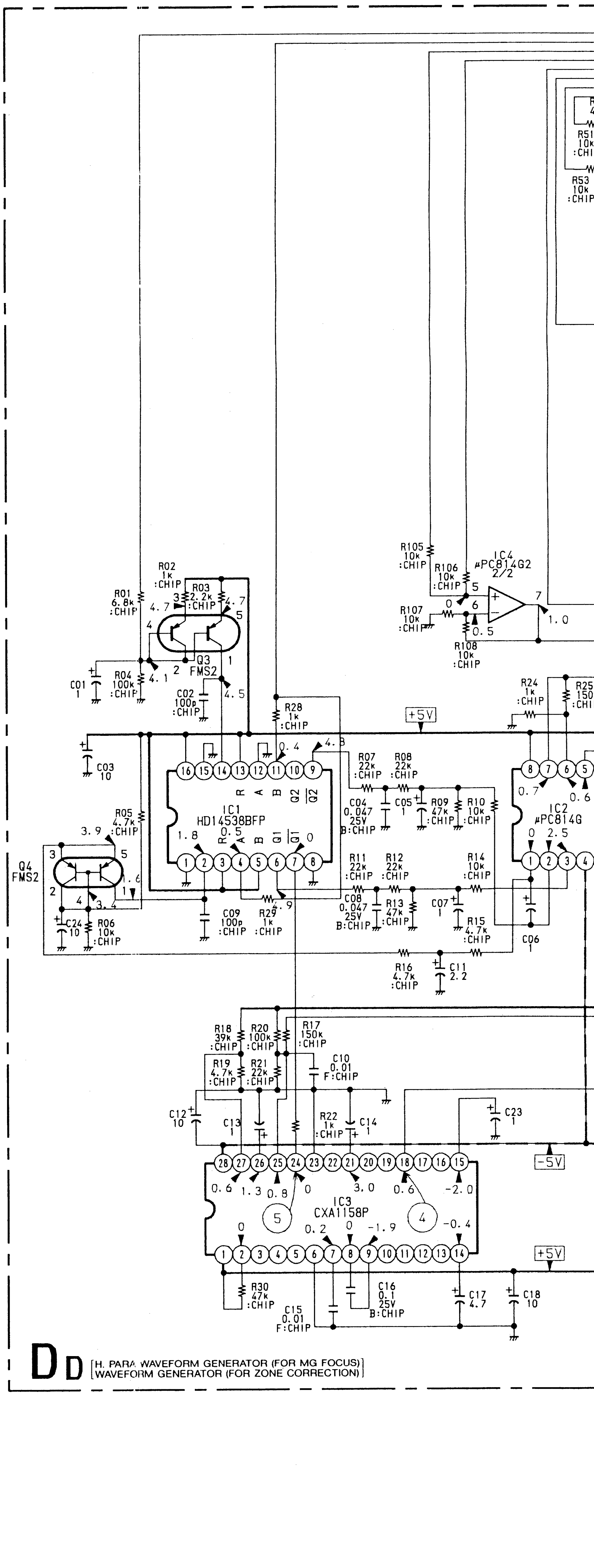


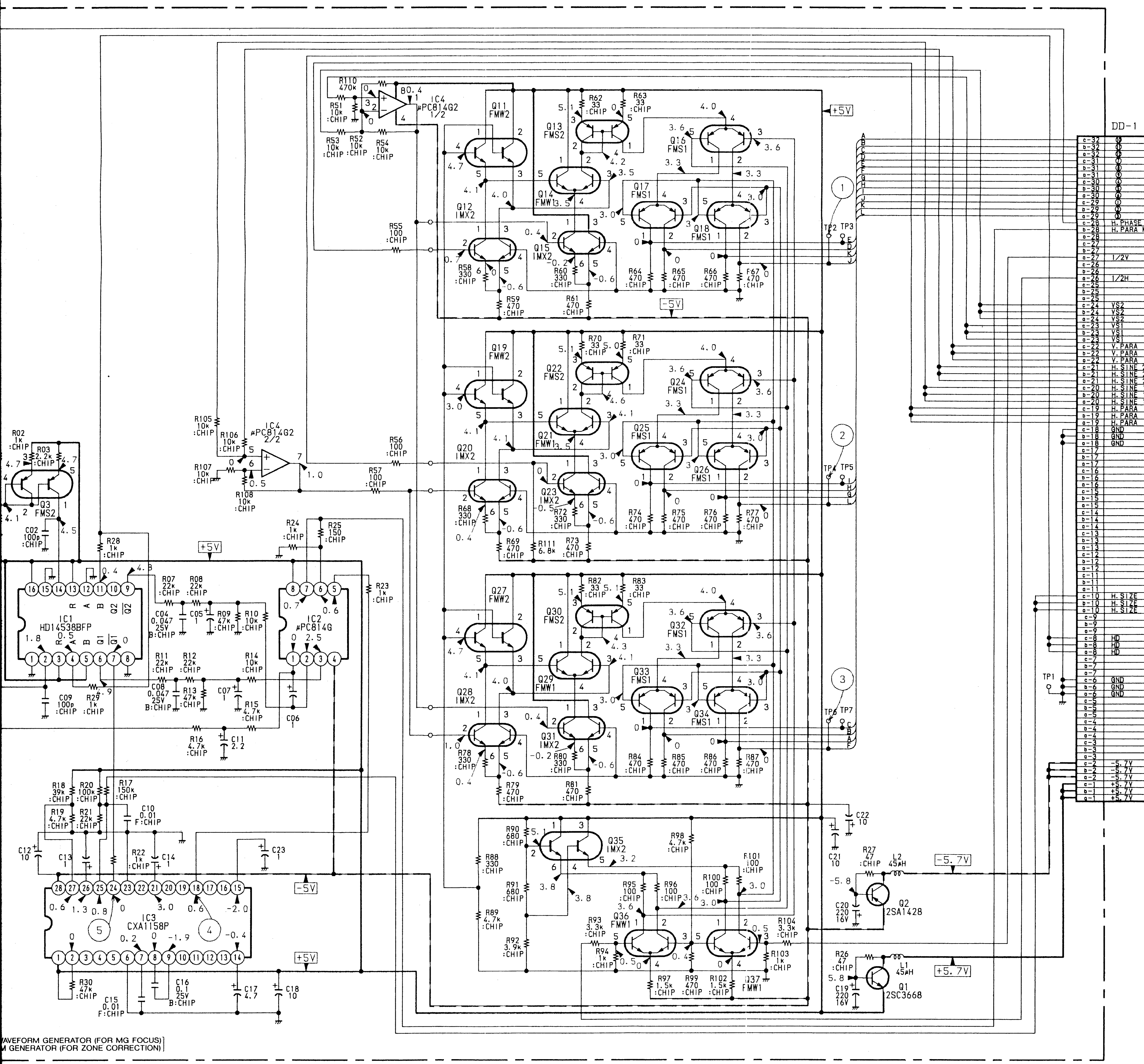
D D [H. PARA WAVEFORM GENERATOR (FOR MG FOCUS) WAVEFORM GENERATOR (FOR ZONE CORRECTION)]

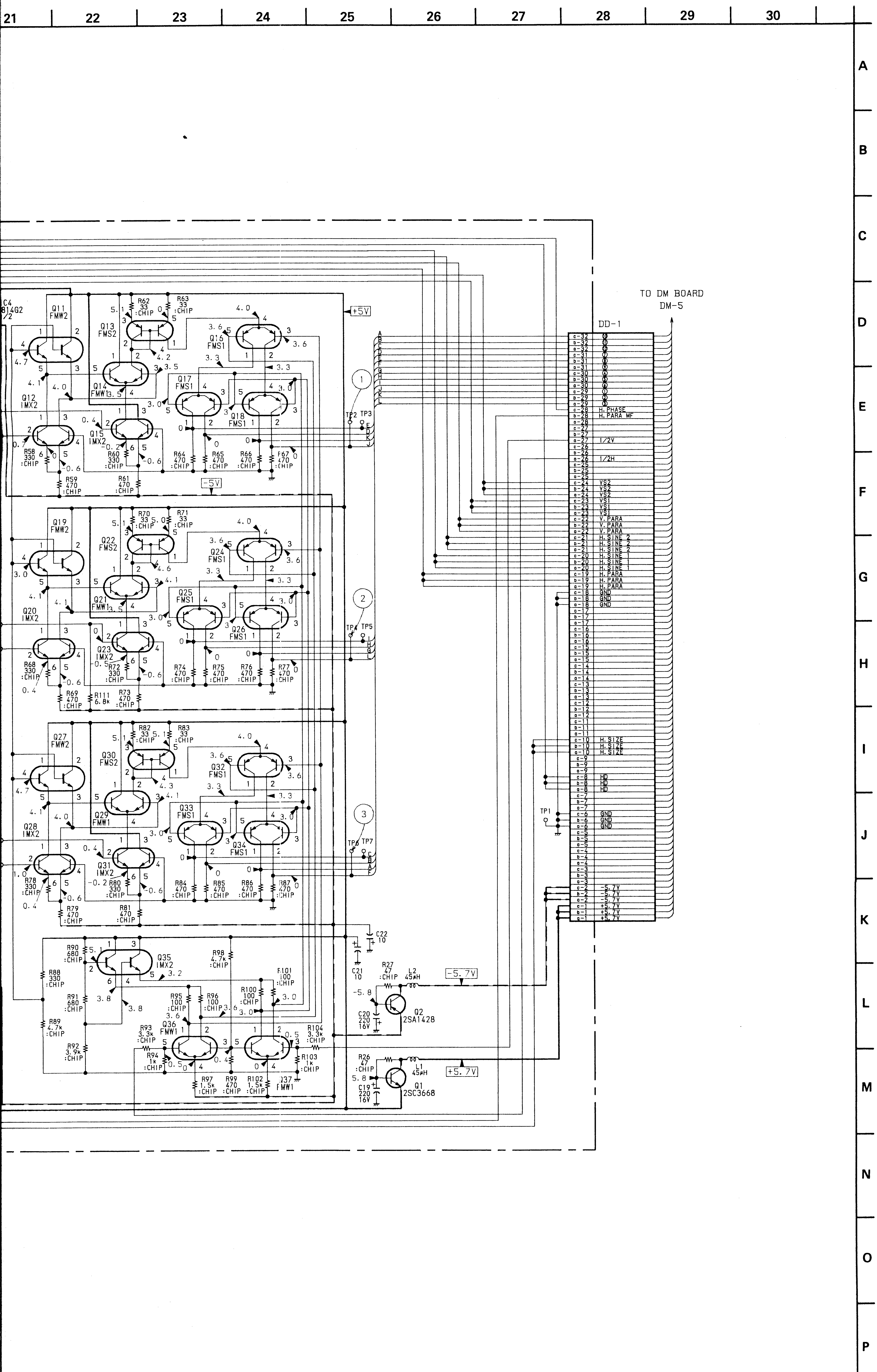
	No.	Part	Function
DD	IC1	HD14538BFP	PULSE GENERATOR (For PHASE SHIFT)
	2 (1/2)	μ PC814G	COMPARATOR・INTEGRAL
	2 (2/2)	μ PC814G	AMP
	3	CXA1158P	H.PARA GENERATOR (For Mg FOCUS)
	4 (1/2)	μ PC814G2	WAVE COMPOSITION (V SIN1, V SIN2)
	4 (2/2)	μ PC814G2	WAVE COMPOSITION (H SIN1, H SIN2)
	Q1	2SC3668	+5V RIPPLE FILTER
	2	2SA1428	−5V RIPPLE FILTER
	3	FMS2	CONSTANT CURRENT
	4	FMS2	CONSTANT CURRENT
	11	FMW2	MULTIPLICATIVE INST (H.PARA x V SIN)
	12	IMX2	MULTIPLICATIVE INST (H.PARA x V SIN)
	13	FMS2	MULTIPLICATIVE INST (H.PARA x V SIN)
	14	FMW1	MULTIPLICATIVE INST (H.PARA x V SIN)
	15	IMX2	MULTIPLICATIVE INST (H.PARA x V SIN)
	16	FMS1	ANALOG SW
	17	FMS1	ANALOG SW
	18	FMS1	ANALOG SW
	19	FMW2	MULTIPLICATIVE INST (H.SIN x V.PARA)
	20	IMX2	MULTIPLICATIVE INST (H.SIN x V.PARA)
	21	FMW1	MULTIPLICATIVE INST (H.SIN x V.PARA)
	22	FMS2	MULTIPLICATIVE INST (H.SIN x V.PARA)
	23	IMX2	MULTIPLICATIVE INST (H.SIN x V.PARA)
	24	FMS1	ANALOG SW
	25	FMS1	ANALOG SW
	26	FMS1	ANALOG SW
	27	FMW2	MULTIPLICATIVE INST (H.SIN x V.SIN)
	28	IMX2	MULTIPLICATIVE INST (H.SIN x V.SIN)
	29	FMW1	MULTIPLICATIVE INST (H.SIN x V.SIN)
	30	FMS2	MULTIPLICATIVE INST (H.SIN x V.SIN)
	31	IMX2	MULTIPLICATIVE INST (H.SIN x V.SIN)
	32	FMS1	ANALOG SW
	33	FMS1	ANALOG SW
	34	FMS1	ANALOG SW
	35	IMX2	PULSE GEN (For SWITCHING)
	36	FMW1	PULSE GEN (For SWITCHING)
	37	FMW1	PULSE GEN (For SWITCHING)

DD BOARD WAVEFORMS



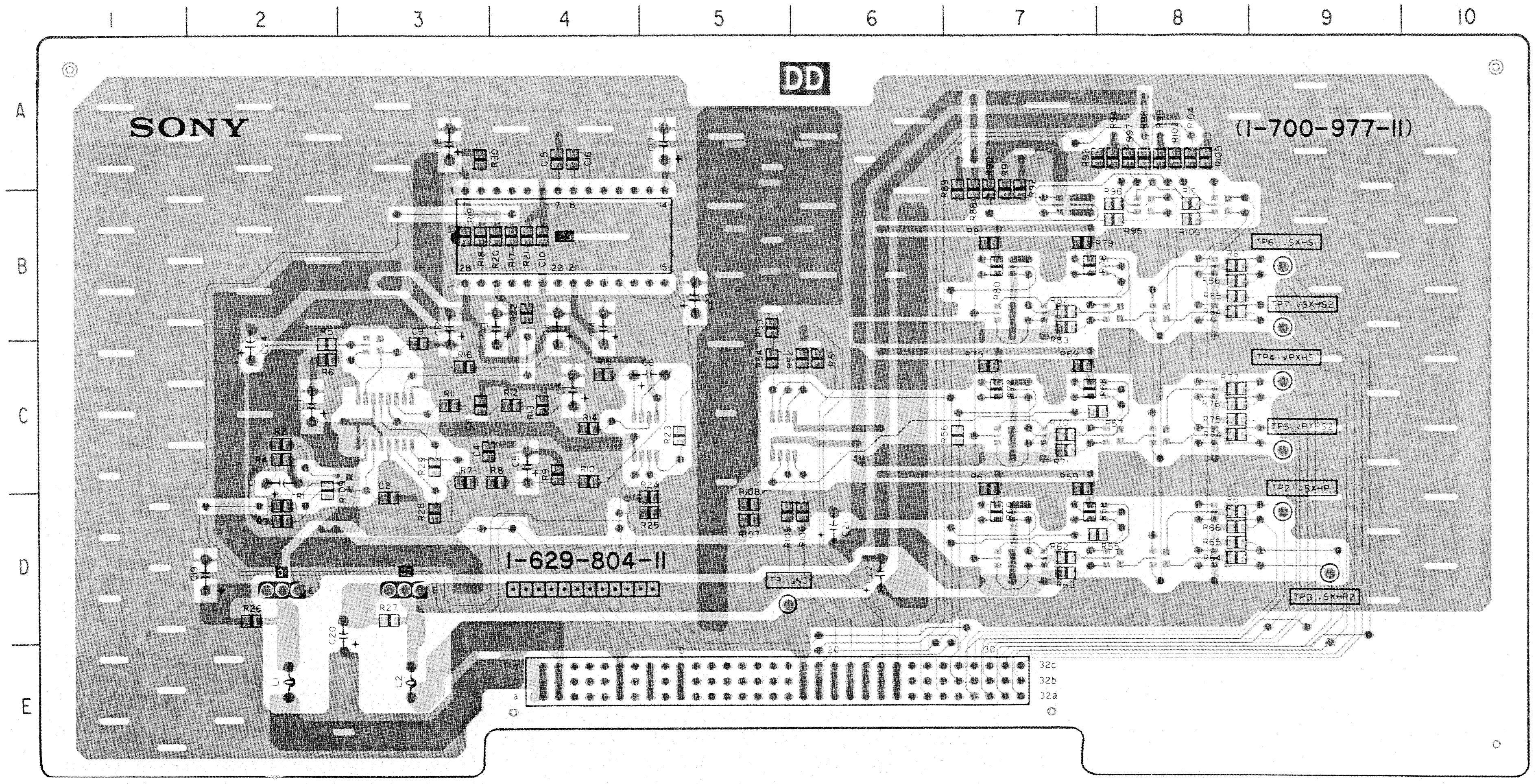



DD-1
IC1
HD14538BFP
IC2
μPC814G
IC3
CXA1158P
IC4
μPC814G2
+5V
-5V
+5.7V
-5.7V
Q1
2SC3668
Q2
2SA1428
H.PHASE
H.PARA
1/2V
1/2H
VS2
VS1
V.PARA
H.SINE
GND
H.SIZE
HD
TP1
TP2
TP3
TP4
TP5
TP6
TP7
WAVEFORM GENERATOR (FOR MG FOCUS)
M GENERATOR (FOR ZONE CORRECTION)


TO DM BOARD
DM-5
DD-1
H. PHASE
H. PARA MF
1/2V
1/2H
VS2
VS1
V. PARA
H. SINE 2
H. SINE 1
H. PARA
GND
H. SIZE
HD
-5.7V
+5.7V
2SA1428
2SC3668
+5V
-5V

DD [H. PARA WAVEFORM GENERATOR (FOR MG FOCUS) / WAVEFORM GENERATOR (FOR ZONE CORRECTION)]

– **DD Board** – *(Conductor Side)*

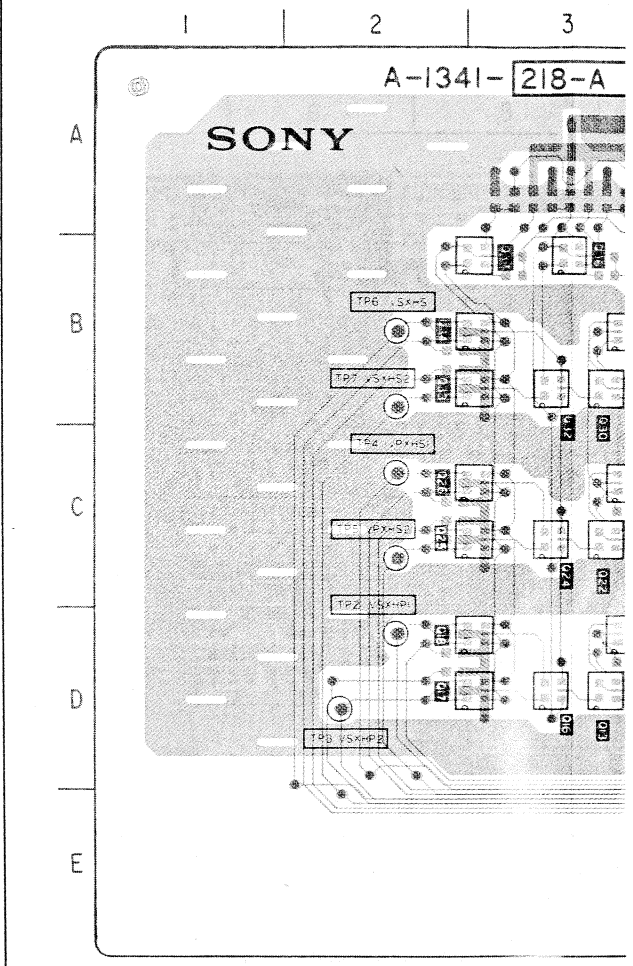


DD BOARD

IC	CONDUCTOR SIDE	COMPONENT SIDE
IC1		C – 8
IC2		C – 6
IC3	B – 4	
IC4		C – 5

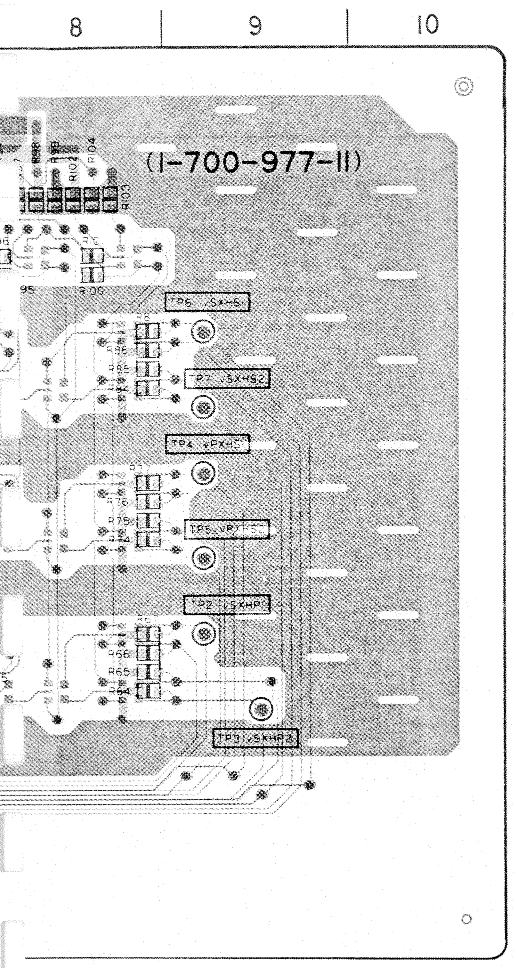
TRANSISTOR	CONDUCTOR SIDE	COMPONENT SIDE
Q1	D – 2	D – 9
Q2	D – 3	D – 8
Q3		C – 8
Q4		C – 8
Q11		D – 4
Q12		D – 4
Q13		D – 3
Q14		D – 4
Q15		D – 4
Q16		D – 3
Q17		D – 3
Q18		D – 3
Q19		C – 4
Q20		C – 3
Q21		C – 4
Q22		C – 3
Q23		C – 4
Q24		C – 3
Q25		C – 3
Q26		C – 3
Q27		B – 4
Q28		B – 3
Q29		B – 4
Q30		B – 3
Q31		B – 4
Q32		B – 3
Q33		B – 3
Q34		B – 3
Q35		B – 4
Q36		B – 3
Q37		B – 3

– **DD Board** – *(Conponent Side)*



HDIH-1200M
RM-1200

DD [H. PARA WAVEFORM GENERATOR (FOR MG FOCUS) WAVEFORM GENERATOR (FOR ZONE CORRECTION)]

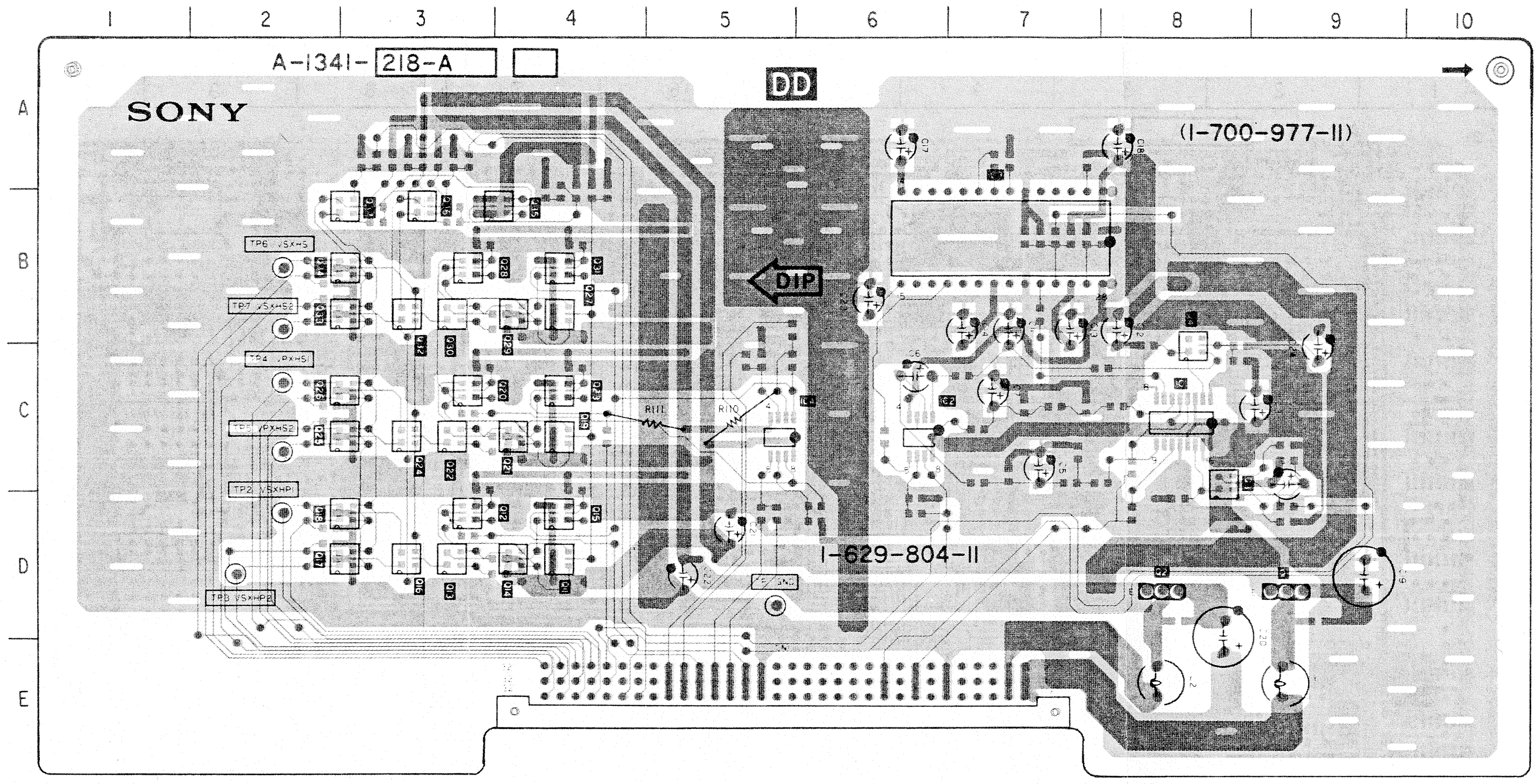


DD BOARD

IC	CONDUCTOR SIDE	COMPONENT SIDE
IC1		C－8
IC2		C－6
IC3	B－4	
IC4		C－5

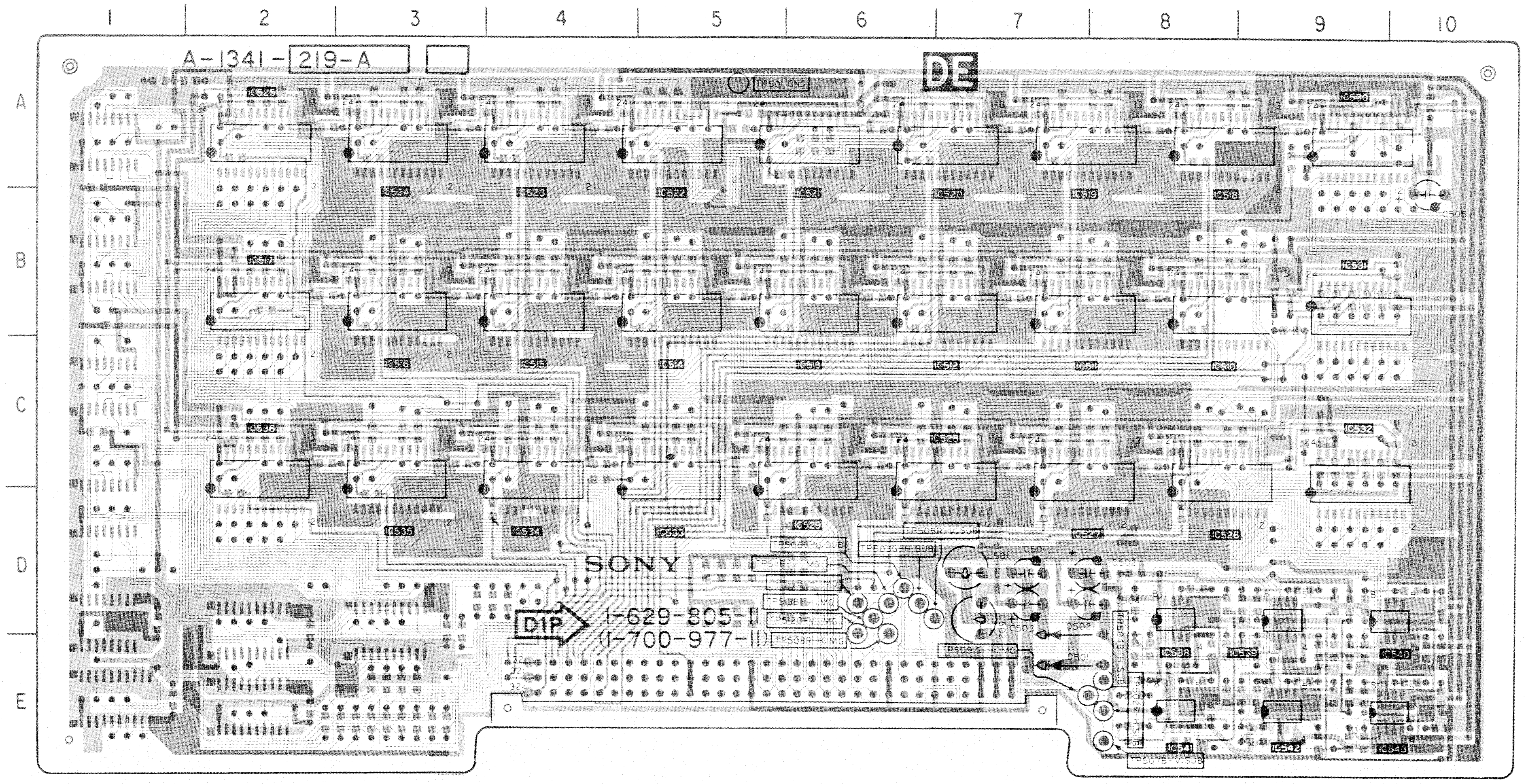
TRANSISTOR	CONDUCTOR SIDE	COMPONENT SIDE
Q1	D－2	D－9
Q2	D－3	D－8
Q3		C－8
Q4		C－8
Q11		D－4
Q12		D－4
Q13		D－3
Q14		D－4
Q15		D－4
Q16		D－3
Q17		D－3
Q18		D－3
Q19		C－4
Q20		C－3
Q21		C－4
Q22		C－3
Q23		C－4
Q24		C－3
Q25		C－3
Q26		C－3
Q27		B－4
Q28		B－3
Q29		B－4
Q30		B－3
Q31		B－4
Q32		B－3
Q33		B－3
Q34		B－3
Q35		B－4
Q36		B－3
Q37		B－3

– DD Board – *(Conponent Side)*



DE [ELECTRONIC VR]

– **DE Board** – *(Conponent Side)*

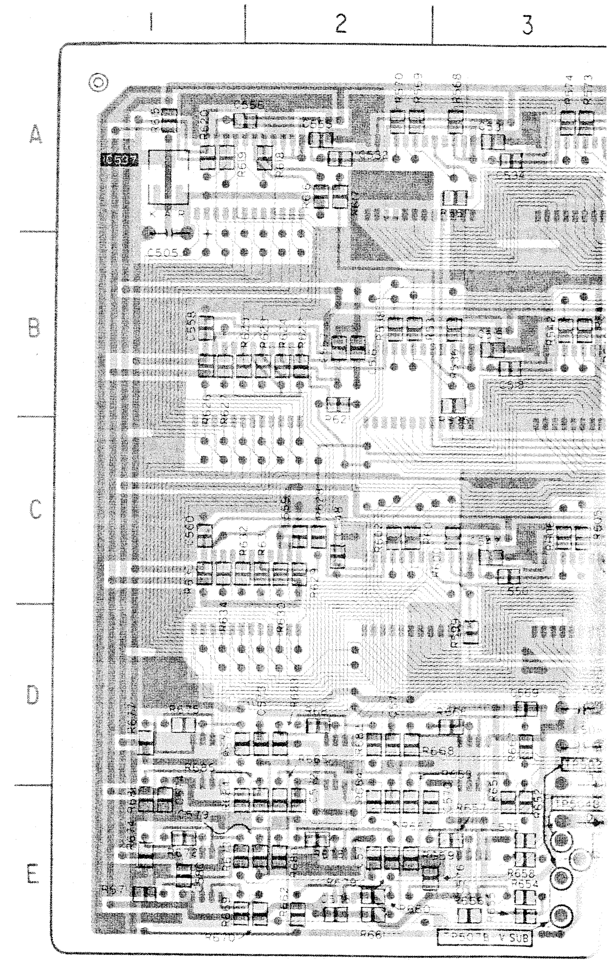


DE BOARD

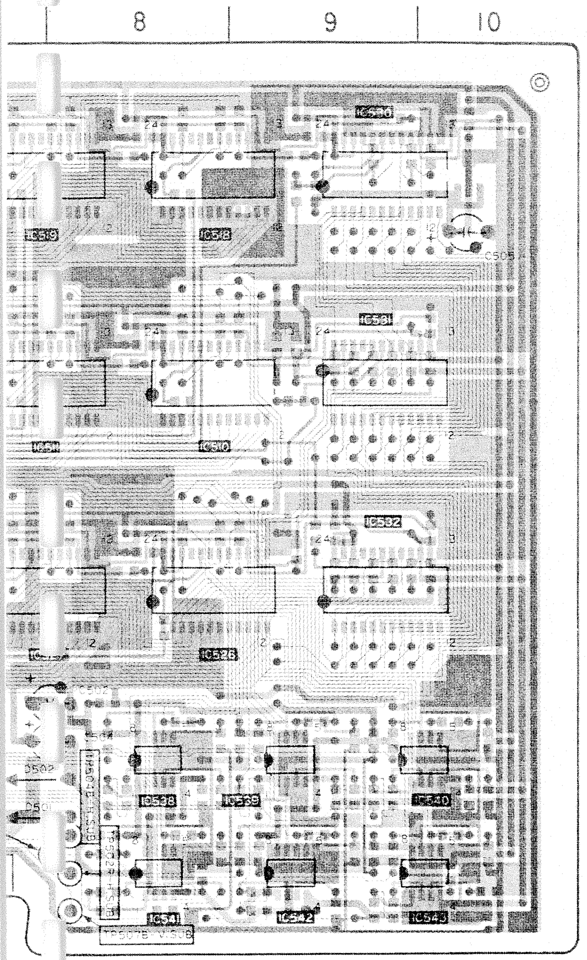
IC	CONDUCTOR SIDE	COMPONENT SIDE
IC501	D – 8	
IC502	D – 9	
IC503	E – 9	
IC504	E – 10	
IC505	D – 10	
IC506	A – 10	
IC507	C – 10	
IC508	D – 10	
IC509	C – 10	
IC510		B – 8
IC511		B – 7
IC512		B – 7
IC513		B – 6
IC514		B – 5
IC515		B – 4
IC516		B – 3
IC517		B – 2
IC518		A – 8
IC519		A – 7
IC520		A – 7
IC521		A – 6
IC522		A – 5
IC523		A – 4
IC524		A – 3
IC525		A – 2
IC526		C – 8
IC527		C – 7
IC528		C – 7
IC529		C – 6
IC530		A – 9
IC531		B – 9
IC532		C – 9
IC533		C – 5
IC534		C – 4
IC535		C – 3
IC536		C – 2
IC537	A – 1	
IC538		D – 8
IC539		D – 9
IC540		B – 10
IC541		E – 8
IC542		E – 9
IC543		E – 10

DIODE	CONDUCTOR SIDE	COMPONENT SIDE
D501	E – 3	E – 7
D502	D – 3	D – 7

– **DE Board** – *(Conductor Side)*



DE [ELECTRONIC VR]



DE BOARD

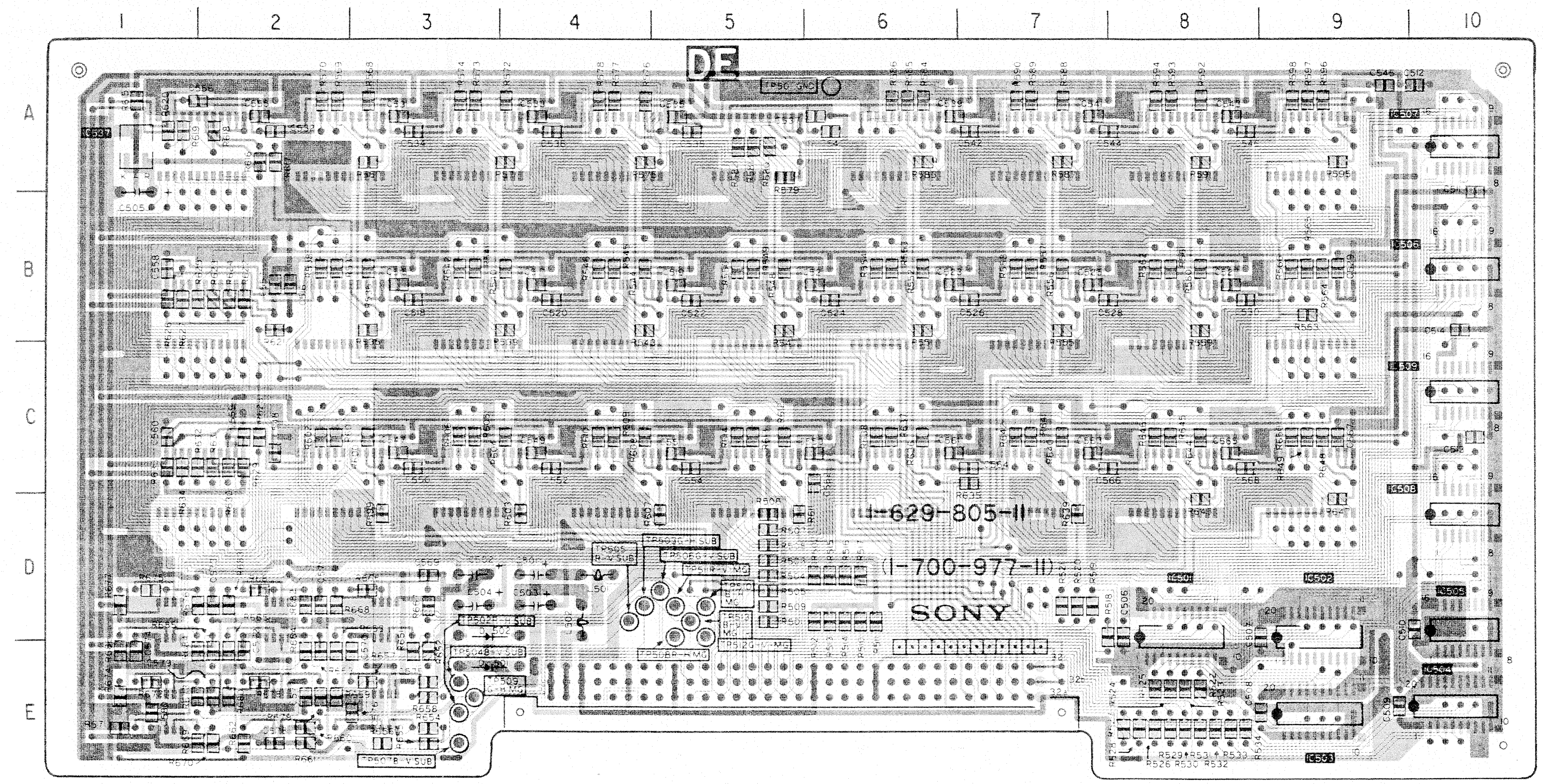
IC

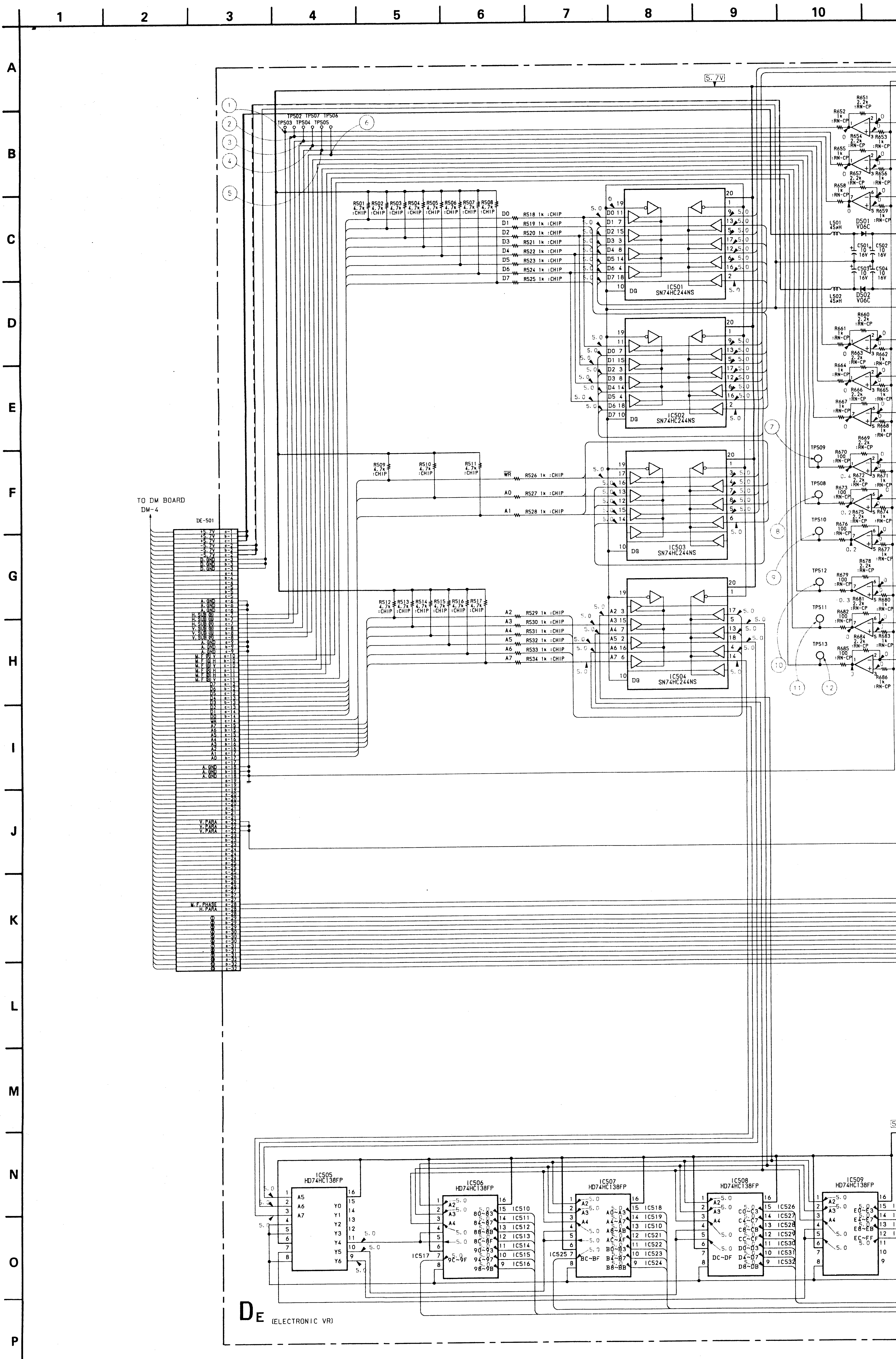
	CONDUCTOR SIDE	COMPONENT SIDE
IC501	D－8	
IC502	D－9	
IC503	E－9	
IC504	E－10	
IC505	D－10	
IC506	A－10	
IC507	C－10	
IC508	D－10	
IC509	C－10	
IC510		B－8
IC511		B－7
IC512		B－7
IC513		B－6
IC514		B－5
IC515		B－4
IC516		B－3
IC517		B－2
IC518		A－8
IC519		A－7
IC520		A－7
IC521		A－6
IC522		A－5
IC523		A－4
IC524		A－3
IC525		A－2
IC526		C－8
IC527		C－7
IC528		C－7
IC529		C－6
IC530		A－9
IC531		B－9
IC532		C－9
IC533		C－5
IC534		C－4
IC535		C－3
IC536		C－2
IC537	A－1	
IC538		D－8
IC539		D－9
IC540		B－10
IC541		E－8
IC542		E－9
IC543		E－10

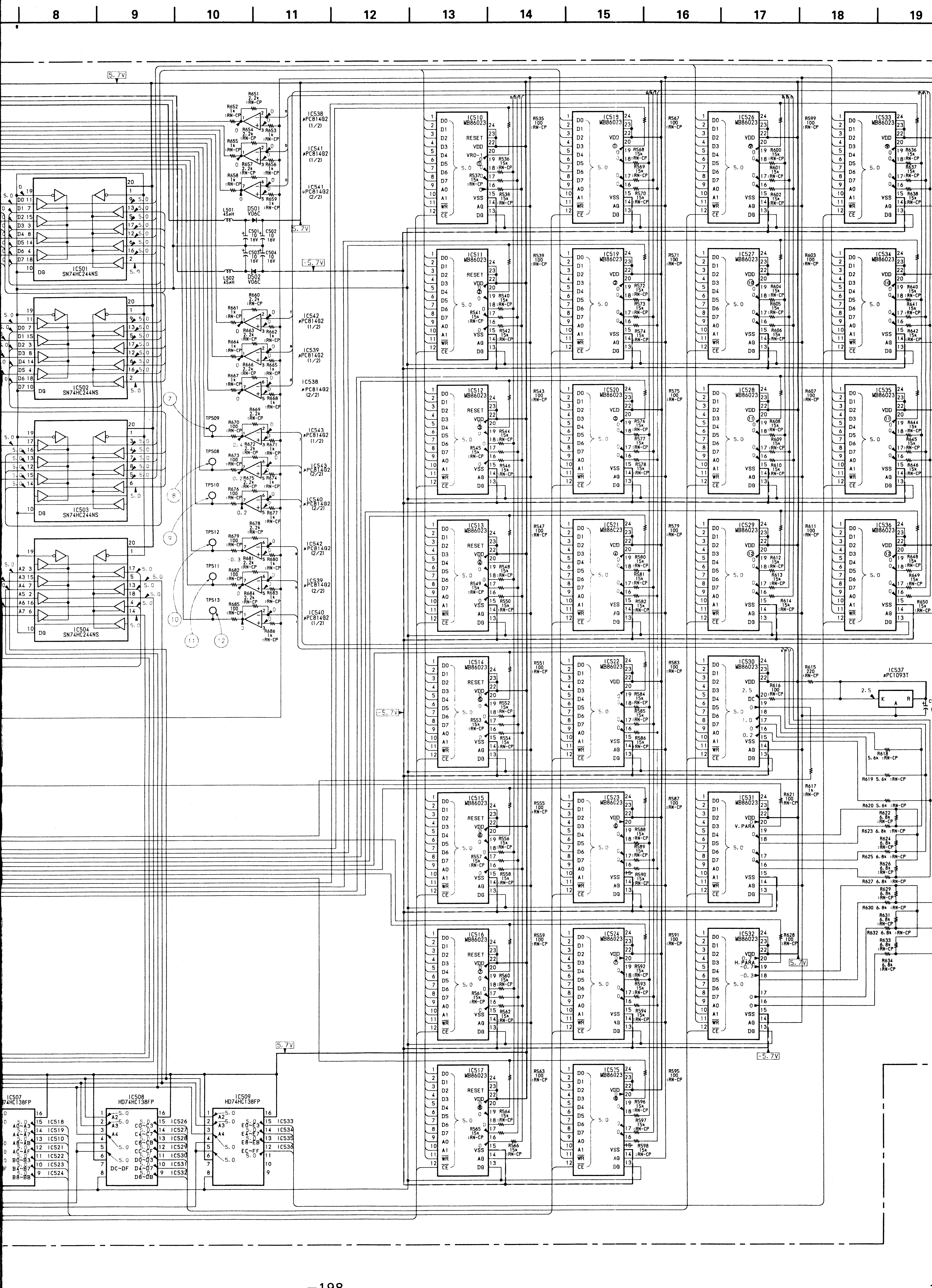
DIODE

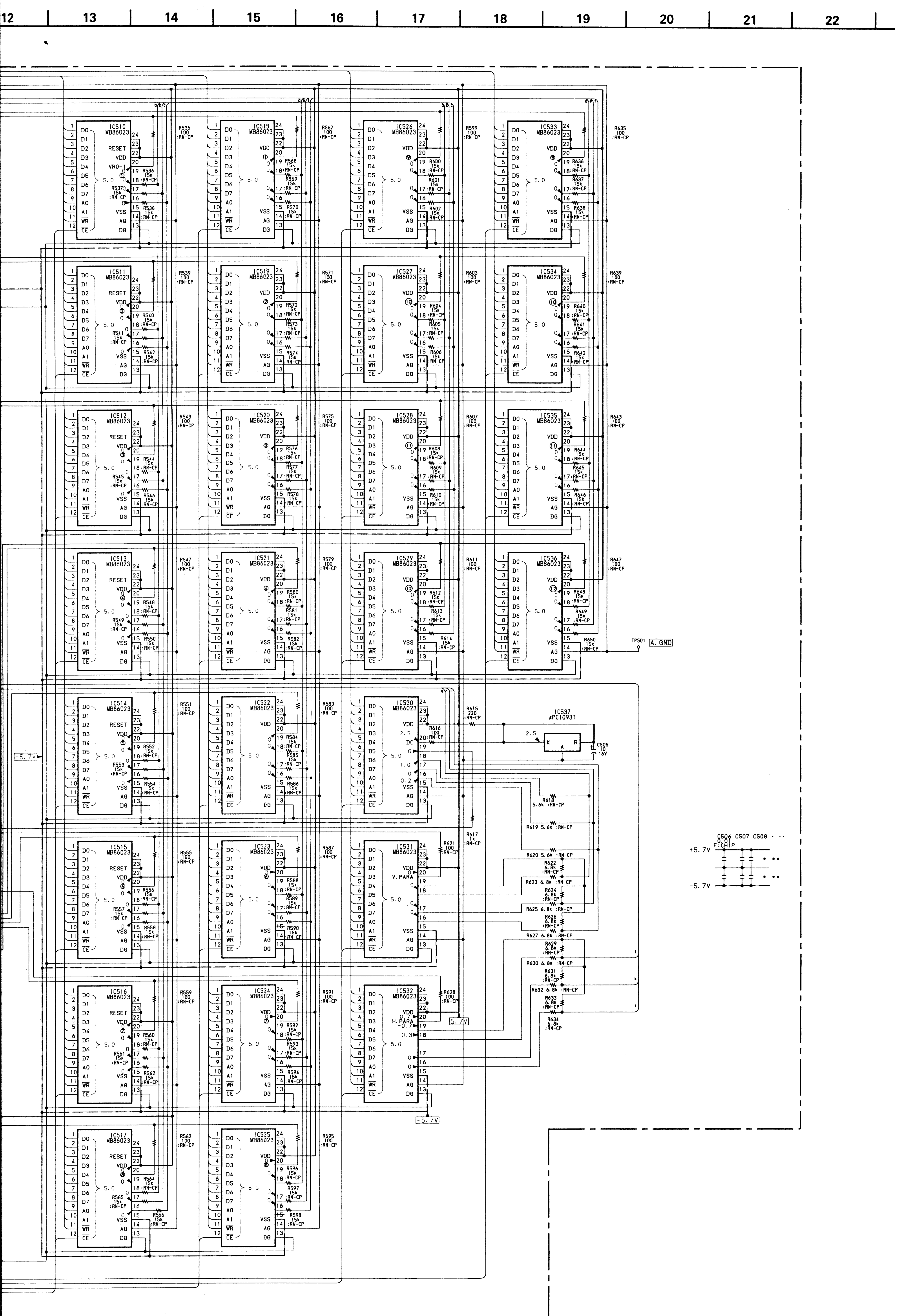
	CONDUCTOR SIDE	COMPONENT SIDE
D501	E－3	E－7
D502	D－3	D－7

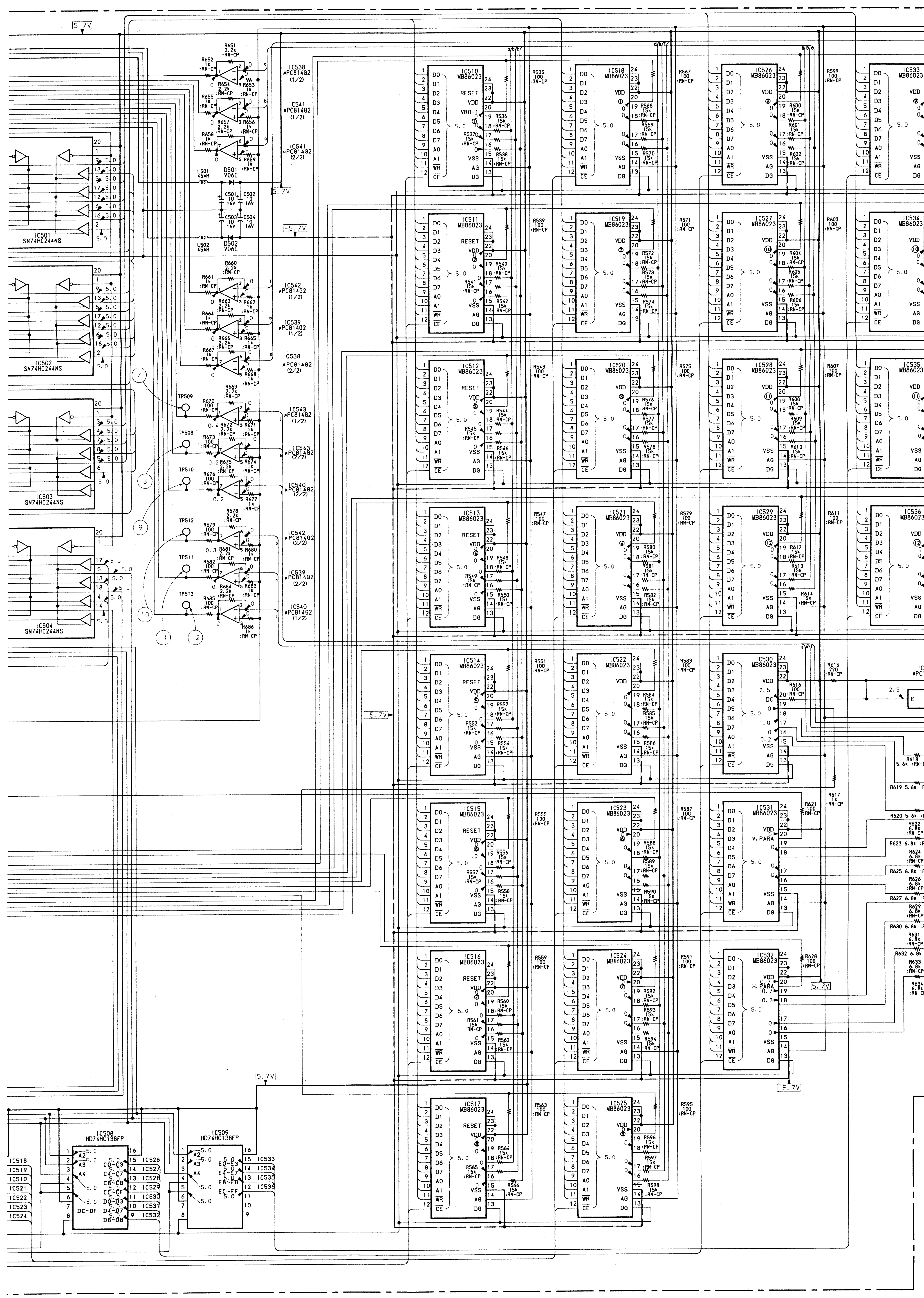
– DE Board – *(Conductor Side)*



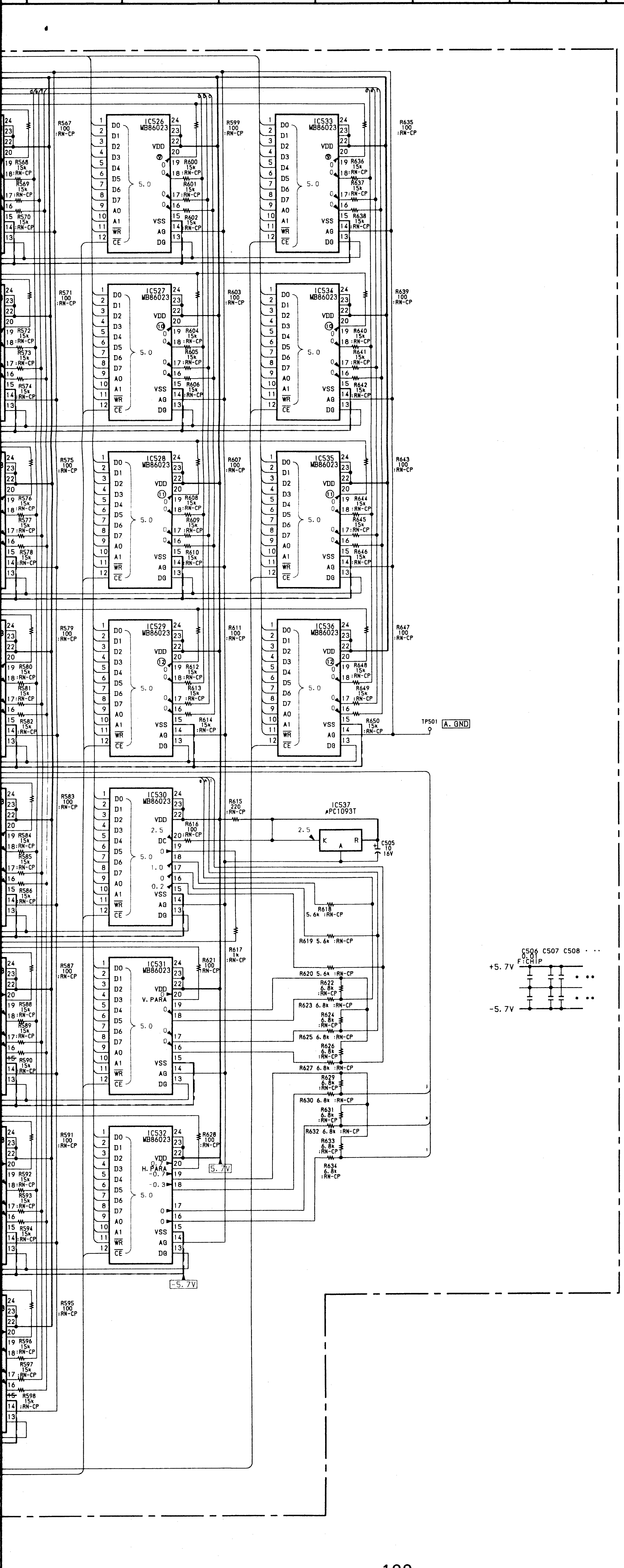

TO DM BOARD
DM-4
DE-501
IC501
SN74HC244NS
IC502
SN74HC244NS
IC503
SN74HC244NS
IC504
SN74HC244NS
IC505
HD74HC138FP
IC506
HD74HC138FP
IC507
HD74HC138FP
IC508
HD74HC138FP
IC509
HD74HC138FP
DE (ELECTRONIC VR)





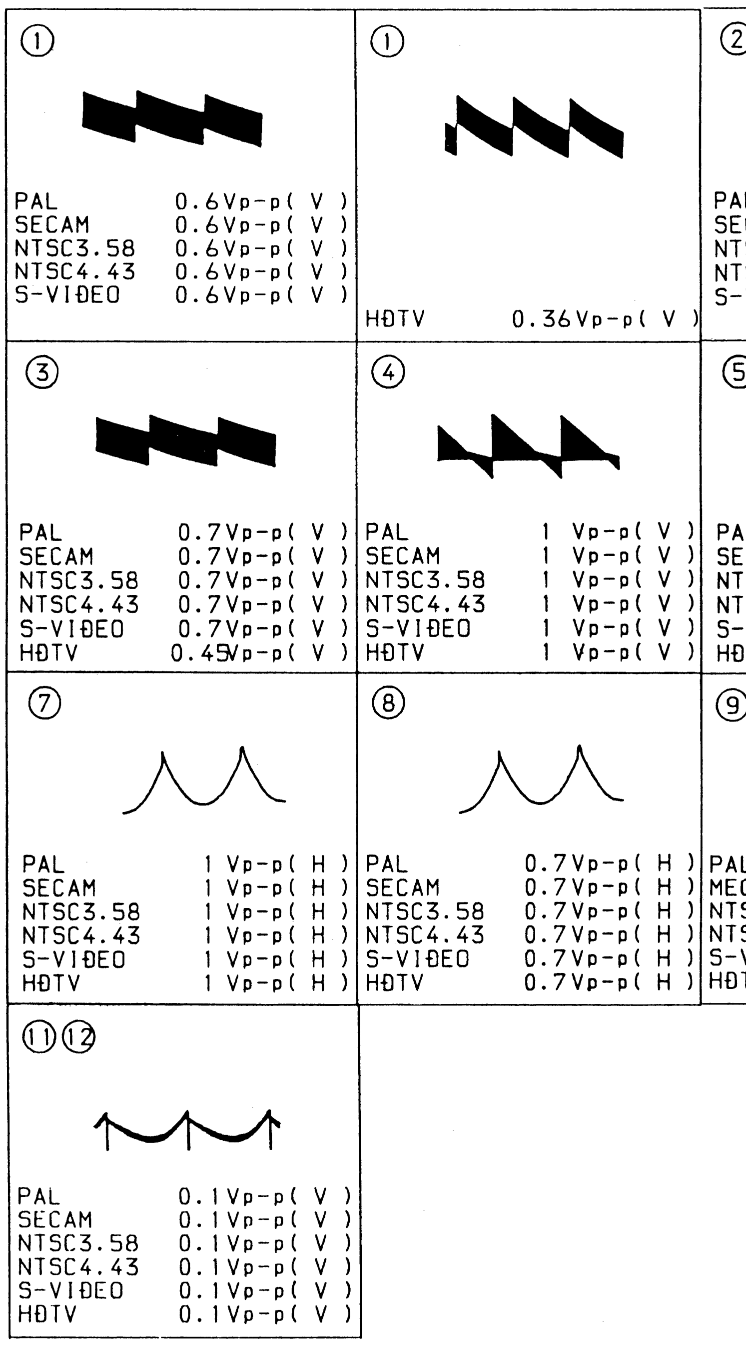


16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27

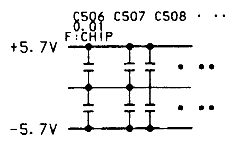


DE	IC501	HD74HC244FP	BUFFER
	502	HD74HC244FP	BUFFER
	503	HD74HC244FP	BUFFER
	504	HD74HC244FP	BUFFER
	505	HD74HC138FP	ADDRESS DECODER
	506	HD74HC138FP	ADDRESS DECODER
	507	HD74HC138FP	ADDRESS DECODER
	508	HD74HC138FP	ADDRESS DECODER
	509	HD74HC138FP	ADDRESS DECODER
	510	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	511	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	512	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	513	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	514	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	515	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	516	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	517	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	518	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	519	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	520	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	521	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	522	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	523	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	524	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	525		
	526	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	527	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	528	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	529	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	530	MB86023	DIGITAL ATTENUATOR (For Mg FOCUS)
	531	MB86023	DIGITAL ATTENUATOR (For Mg FOCUS)
	532	MB86023	DIGITAL ATTENUATOR (For Mg FOCUS)
	533	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	534	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	535	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	536	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	537		
	538 (1/2)	μ PC814G2	WAVE COMPOSITION (H.SUB (G))
	538 (2/2)	μ PC814G2	WAVE COMPOSITION (V.SUB (G))
	539 (1/2)	μ PC814G2	WAVE COMPOSITION (V.SUB (R))
	539 (2/2)	μ PC814G2	WAVE COMPOSITION (V.Mg (R))
	540 (1/2)	μ PC814G2	WAVE COMPOSITION (V.Mg (B))
	540 (2/2)	μ PC814G2	WAVE COMPOSITION (H.Mg (B))
	541 (1/2)	μ PC814G2	WAVE COMPOSITION (H.SUB (R))
	541 (2/2)	μ PC814G2	WAVE COMPOSITION (H.SUB (B))
	542	μ PC814G2	WAVE COMPOSITION (V.SUB (B))
	543	μ PC814G2	WAVE COMPOSITION (V.SUB (B))
	D501	V06C	
	502	V06C	

DE BOARD WAVEFORMS



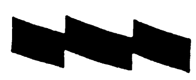
TP501 A. GND



DE	IC501	HD74HC244FP	BUFFER
	502	HD74HC244FP	BUFFER
	503	HD74HC244FP	BUFFER
	504	HD74HC244FP	BUFFER
	505	HD74HC138FP	ADDRESS DECODER
	506	HD74HC138FP	ADDRESS DECODER
	507	HD74HC138FP	ADDRESS DECODER
	508	HD74HC138FP	ADDRESS DECODER
	509	HD74HC138FP	ADDRESS DECODER
	510	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	511	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	512	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	513	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	514	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	515	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	516	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	517	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	518	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	519	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	520	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	521	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	522	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	523	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	524	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	525		
	526	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	527	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	528	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	529	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	530	MB86023	DIGITAL ATTENUATOR (For Mg FOCUS)
	531	MB86023	DIGITAL ATTENUATOR (For Mg FOCUS)
	532	MB86023	DIGITAL ATTENUATOR (For Mg FOCUS)
	533	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	534	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	535	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	536	MB86023	DIGITAL ATTENUATOR (For ZONE CORR WAVE)
	537		
	538 (1/2)	μPC814G2	WAVE COMPOSITION (H.SUB (G))
	538 (2/2)	μPC814G2	WAVE COMPOSITION (V.SUB (G))
	539 (1/2)	μPC814G2	WAVE COMPOSITION (V.SUB (R))
	539 (2/2)	μPC814G2	WAVE COMPOSITION (V.Mg (R))
	540 (1/2)	μPC814G2	WAVE COMPOSITION (V.Mg (B))
	540 (2/2)	μPC814G2	WAVE COMPOSITION (H.Mg (B))
	541 (1/2)	μPC814G2	WAVE COMPOSITION (H.SUB (R))
	541 (2/2)	μPC814G2	WAVE COMPOSITION (H.SUB (B))
	542	μPC814G2	WAVE COMPOSITION (V.SUB (B))
	543	μPC814G2	WAVE COMPOSITION (V.SUB (B))
	D501	V06C	
	502	V06C	

DE BOARD WAVEFORMS

①



PAL 0.6Vp-p(V)
SECAM 0.6Vp-p(V)
NTSC3.58 0.6Vp-p(V)
NTSC4.43 0.6Vp-p(V)
S-VIDEO 0.6Vp-p(V)

①



HDTV 0.36Vp-p(V)

②



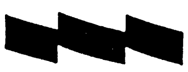
PAL 0.45Vp-p(V)
SECAM 0.45Vp-p(V)
NTSC3.58 0.45Vp-p(V)
NTSC4.43 0.45Vp-p(V)
S-VIDEO 0.45Vp-p(V)

②



HDTV 0.2Vp-p(V)

③



PAL 0.7Vp-p(V)
SECAM 0.7Vp-p(V)
NTSC3.58 0.7Vp-p(V)
NTSC4.43 0.7Vp-p(V)
S-VIDEO 0.7Vp-p(V)
HDTV 0.45Vp-p(V)

④



PAL 1 Vp-p(V)
SECAM 1 Vp-p(V)
NTSC3.58 1 Vp-p(V)
NTSC4.43 1 Vp-p(V)
S-VIDEO 1 Vp-p(V)
HDTV 1 Vp-p(V)

⑤



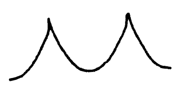
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SECAM 0.72Vp-p(V)
NTSC3.58 0.72Vp-p(V)
NTSC4.43 0.72Vp-p(V)
S-VIDEO 0.72Vp-p(V)
HDTV 0.72Vp-p(V)

⑥



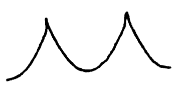
PAL 0.6Vp-p(V)
SECAM 0.6Vp-p(V)
NTSC3.58 0.6Vp-p(V)
NTSC4.43 0.6Vp-p(V)
S-VIDEO 0.6Vp-p(V)
HDTV 0.6Vp-p(V)

⑦



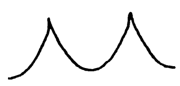
PAL 1 Vp-p(H)
SECAM 1 Vp-p(H)
NTSC3.58 1 Vp-p(H)
NTSC4.43 1 Vp-p(H)
S-VIDEO 1 Vp-p(H)
HDTV 1 Vp-p(H)

⑧



PAL 0.7Vp-p(H)
SECAM 0.7Vp-p(H)
NTSC3.58 0.7Vp-p(H)
NTSC4.43 0.7Vp-p(H)
S-VIDEO 0.7Vp-p(H)
HDTV 0.7Vp-p(H)

⑨



PAL 0.7Vp-p(H)
MECAM 0.7Vp-p(H)
NTSC3.58 0.7Vp-p(H)
NTSC4.43 0.7Vp-p(H)
S-VIDEO 0.7Vp-p(H)
HDTV 0.7Vp-p(H)

⑩



PAL 0.1Vp-p(V)
SECAM 0.1Vp-p(V)
NTSC3.58 0.1Vp-p(V)
NTSC4.43 0.1Vp-p(V)
S-VIDEO 0.1Vp-p(V)
HDTV 0.1Vp-p(V)

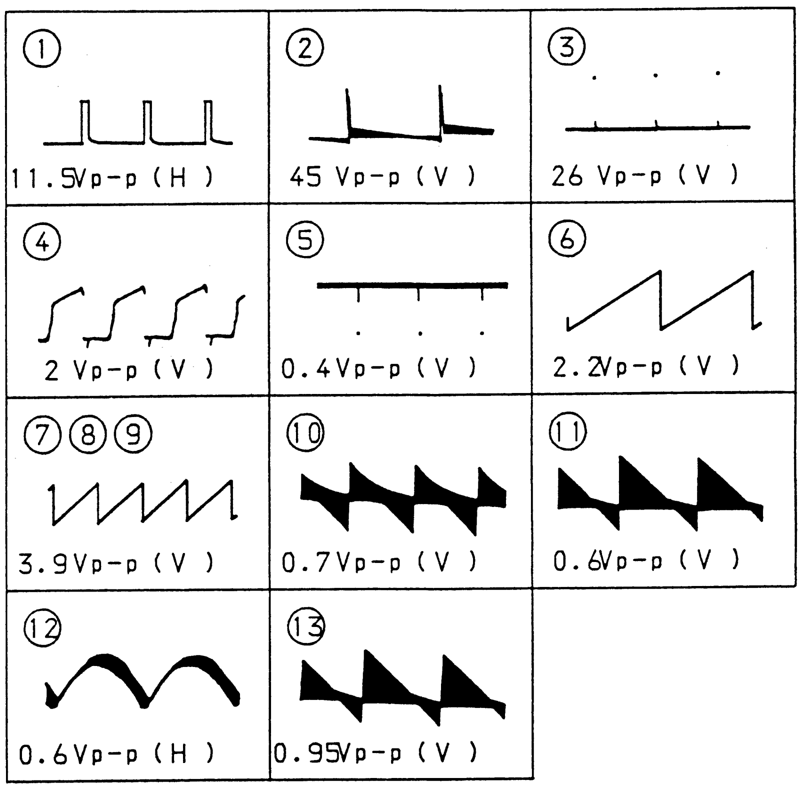
⑪⑫



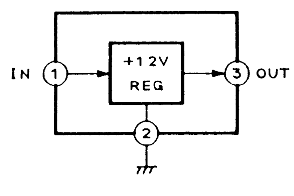
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SECAM 0.1Vp-p(V)
NTSC3.58 0.1Vp-p(V)
NTSC4.43 0.1Vp-p(V)
S-VIDEO 0.1Vp-p(V)
HDTV 0.1Vp-p(V)

	Ref.	Part	Function	Ref.	Part	Function
DC	IC1	μPC7812H	+12V REG	304	2SD1315	R-H SUB OUT-2
	2	μPC7912H	−12V REG	305	2SA1358	G-H SUB ACTIVE LOAD-2
	3	μPC4558	V.STOP DET-1	306	2SC3421	G-H SUB DRIVE
	4	μPC1498H	R-V OUT	307	2SD1977	G-H SUB OUT-1
	5	μPC4558	V.STOP DET-2	308	2SB1315	G-H SUB OUT-2
	6	μPC1498H	G-V OUT	309	2SA1358	B-H SUB ACTIVE LOAD-2
	7	μPC4558	V.STOP DET-3	310	2SC3421	B-H SUB DRIVE
	8	μPC1498H	B-V OUT	311	2SD1977	B-H SUB OUT-1
	9	μPC4558	V.PULSE GEN	312	2SB1315	B-H SUB OUT-2
	101	μPC814	R SUB AMP			
	102	μPC814	G SUB AMP	D1	V06C	+12V REG PROT
	103	μPC814	B SUB AMP	2	V06C	−12V REG PROT
	201	LM6364N	R-V SUB PRE DRIVE	3	V06C	PULSE CHARGE-1
	202	LM6364N	G-V SUB PRE DRIVE	4	1SS119	GATE-1
	203	LM6364N	B-V SUB PRE DRIVE	5	V06C	PULSE CHARGE-2
	301	LM6364N	R-H SUB PRE DRIVE	6	1SS119	GATE-2
	302	LM6364N	G-H SUB PRE DRIVE	7	V06C	PULSE CHARGE-3
	303	LM6364N	B-H SUB PRE DRIVE	8	1SS119	GATE-3
				9	1SS119	GATE-4
	Q1	2SC2785	V.PULSE DET-1	10	1SS119	GATE-5
	2	2SC2785	V.PULSE DET-2	11	1SS119	PROT-1
	3	2SC2785	V.PULSE DET-3	12	1SS119	GATE-6
	4	DTC144ES	V.STOP CONT SW-1	13	1SS119	PROT-2
	5	DTC144ES	V.STOP CONT SW-2	15	1SS119	DIS CHARGE
	6	2SC2785	V.PULSE BUFF	101	1SS119	H.PULSE CLAMP-1
	7	DTC144ES	V.INV SW	102	ERC88-009	+P.VOLT GATE-1
	8	DTC144ES	FAN PROT-1	103	ERC88-009	+P.VOLT GATE-2
	9	2SA1358	CURRENT PROT-1	104	1SS119	H.PULSE CLAMP-2
	10	2SC3421	CURRENT PROT-2	105	ERC88-009	−P.VOLT GATE-1
	11	DTC144ES	FAN PROT-2	106	ERC88-009	−P.VOLT GATE-2
	13	DTC144ES	FAN PROT-3	201	RD15ESB2	LEVEL SHIFT-1
	101	2SC2785	AD HD BUFF-1	202	RD3.3ESB2	R-V SUB ACTIVE LOAD-1
	102	2SK523	AD HD SW	203	1SS119	R-V SUB BIAS-1
	103	2SC2785	BUFF-1	204	1SS119	R-V SUB BIAS-2
	104	2SA1175	BUFF-2	205	RE15ESB2	LEVEL SHIFT-2
	105	2SJ143	+P VOLT SW	206	RE3.3ESB2	G-V SUB ACTIVE LOAD-1
	106	2SC2785	AD HD BUFF-2	207	1SS119	G-V SUB BIAS-1
	107	2SA1175	AD HD BUFF-3	208	1SS119	G-V SUB BIAS-2
	108	2SK817	−P VOLT SW	209	RD15ESB2	LEVEL SHIFT-3
	201	2SA1358	R-V SUB ACTIVE LOAD-2	210	RD3.3ESB2	B-V SUB ACTIVE LOAD-1
	202	2SC3421	R-V SUB DRIVE	211	1SS119	B-V SUB BIAS-1
	203	2SD1977	R-V SUB OUT-1	212	1SS119	B-V SUB BIAS-2
	204	2SB1315	R-V SUB OUT-2	301	RD15ESB2	LEVEL SHIFT-4
	205	2SA1358	G-V SUB ACTIVE LOAD-2	302	RD3.3ESB2	R-H SUB ACTIVE LOAD-1
	206	2SC3421	G-V SUB DRIVE	303	1SS119	R-H SUB BIAS-1
	207	2SD1977	G-V SUB OUT-1	304	1SS119	R-H SUB BIAS-2
	208	2SB1315	G-V SUB OUT-2	305	RD15ESB2	LEVEL SHIFT-5
	209	2SA1358	G-V SUB ACTIVE LOAD-2	306	RD3.3ESB2	G-H SUB ACTIVE LOAD-1
	210	2SC3421	G-V SUB DRIVE	307	1SS119	G-H SUB BIAS-1
	211	2SD1977	G-V SUB OUT-1	308	1SS119	G-H SUB BIAS-2
	212	2SB1315	G-V SUB OUT-2	309	RD15ESB2	LEVEL SHIFT-6
	301	2SA1358	R-H SUB ACTIVE LOAD-2	310	RD3.3ESB2	B-H SUB ACTIVE LOAD-1
	302	2SC3421	R-H SUB DRIVE	311	1SS119	B-H SUB BIAS-1
	303	2SD1977	R-H SUB OUT-1	312	1SS119	B-H SUB BIAS-2

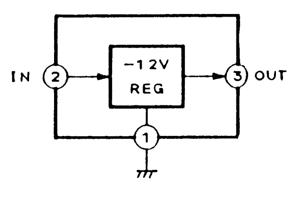
DC BOARD WAVEFORMS

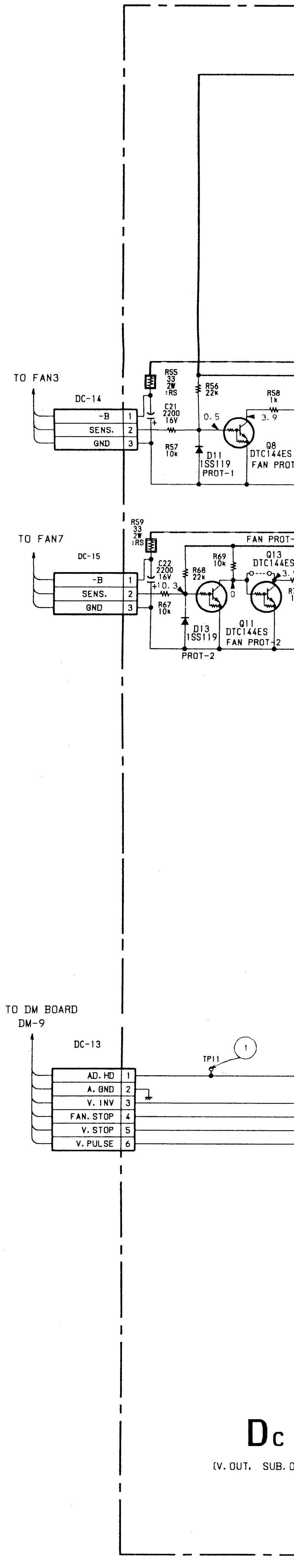


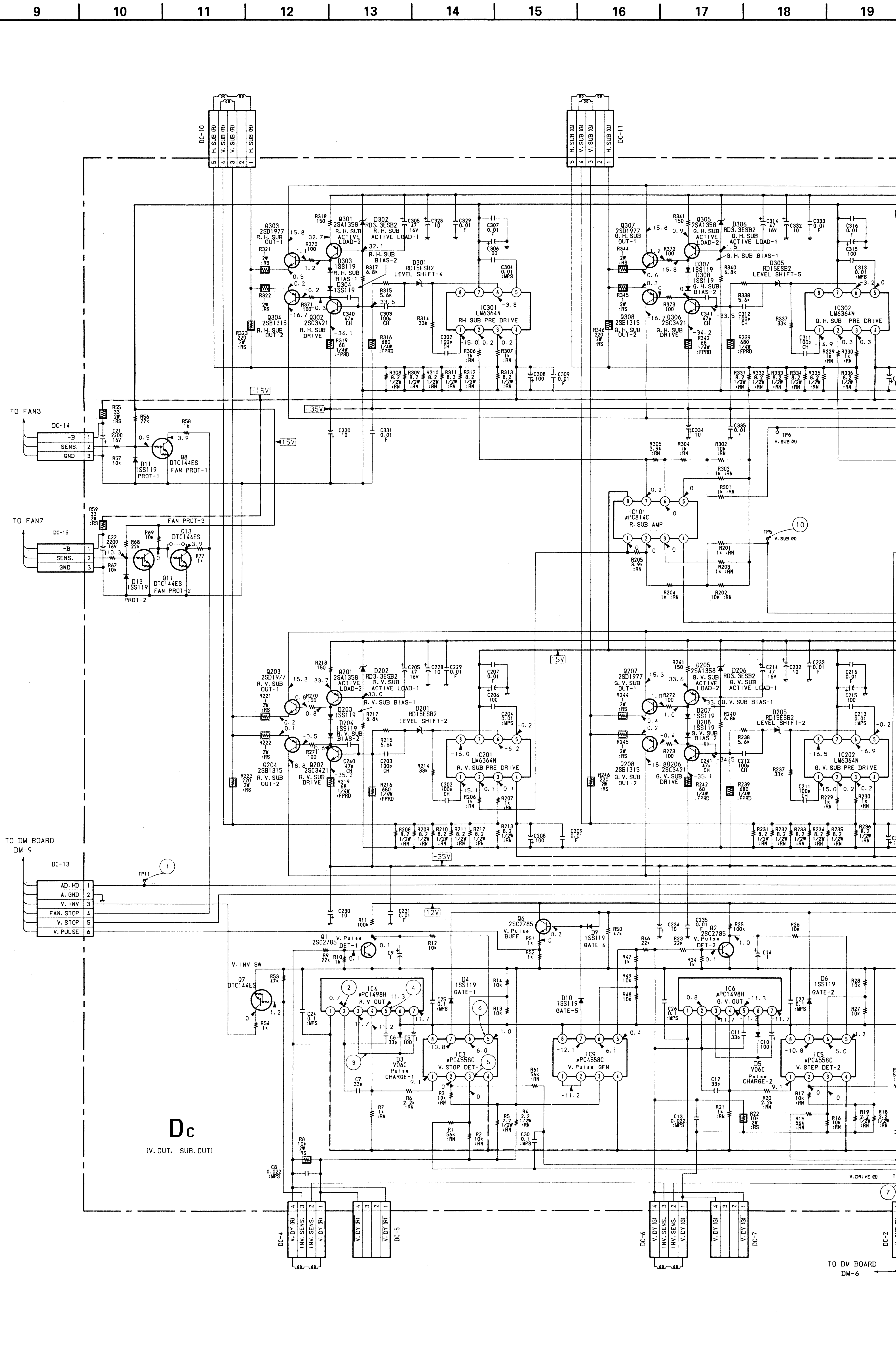
DC BOARD IC1 μPC7812H



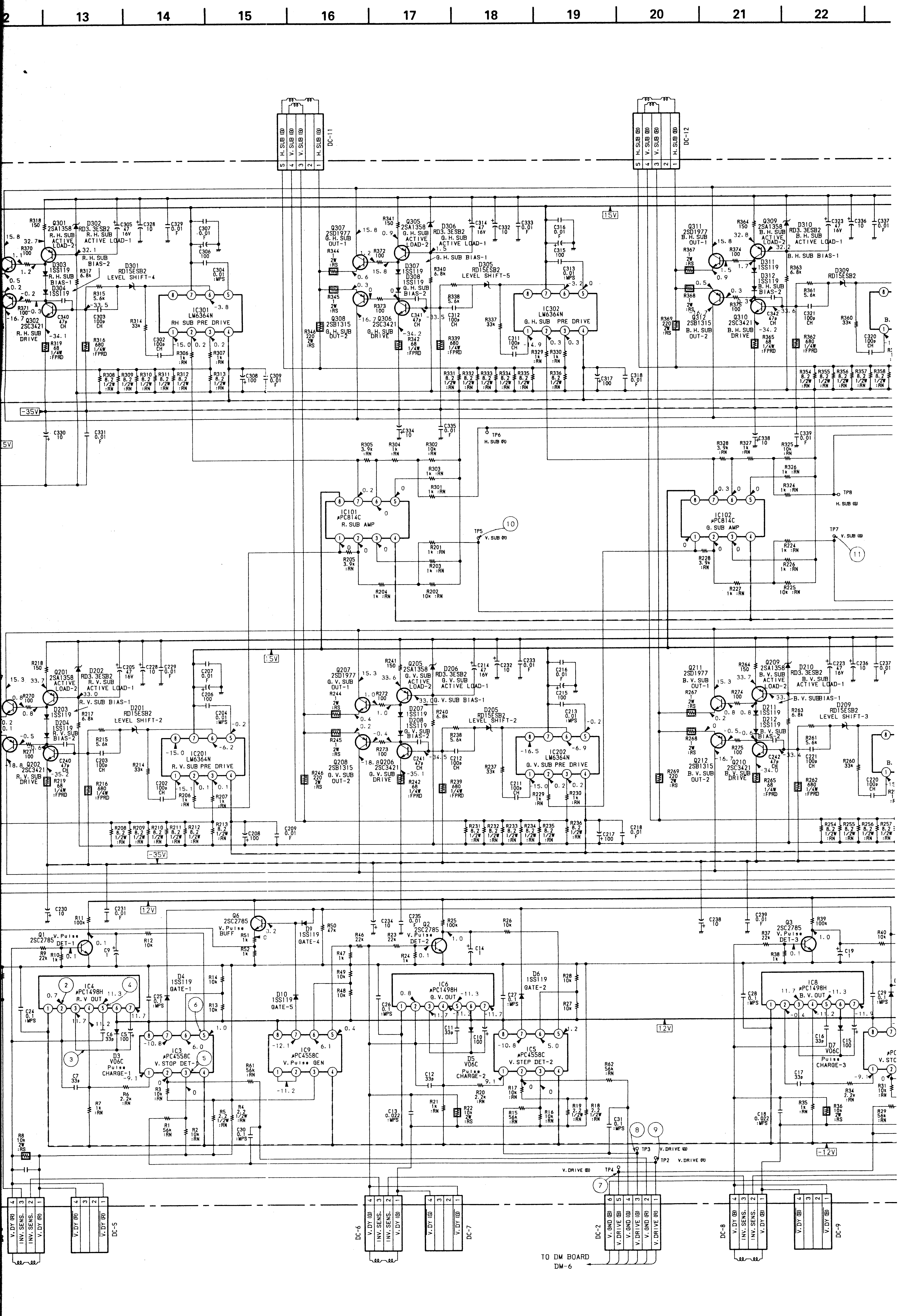
DC BOARD IC2 μPC7912H



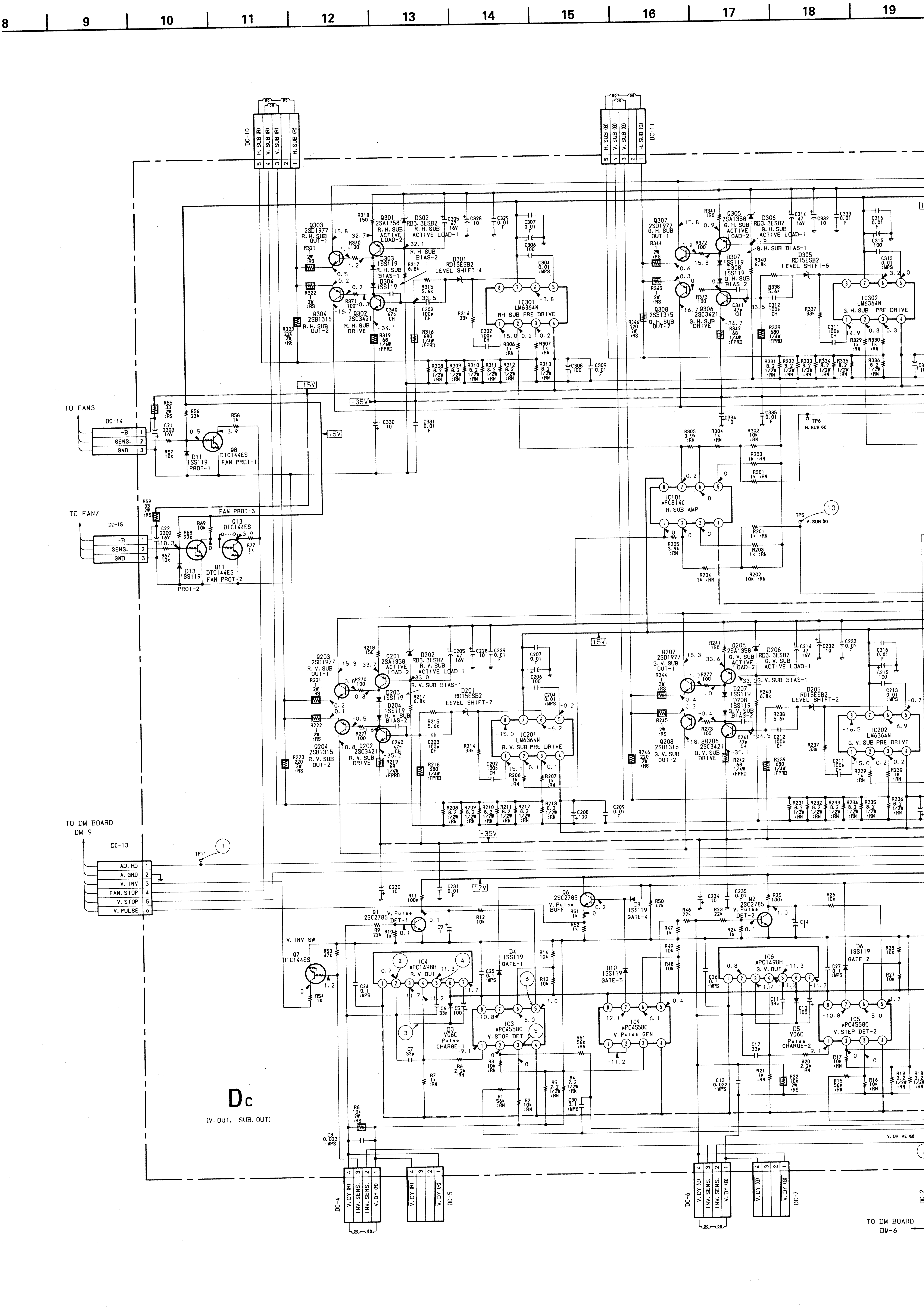


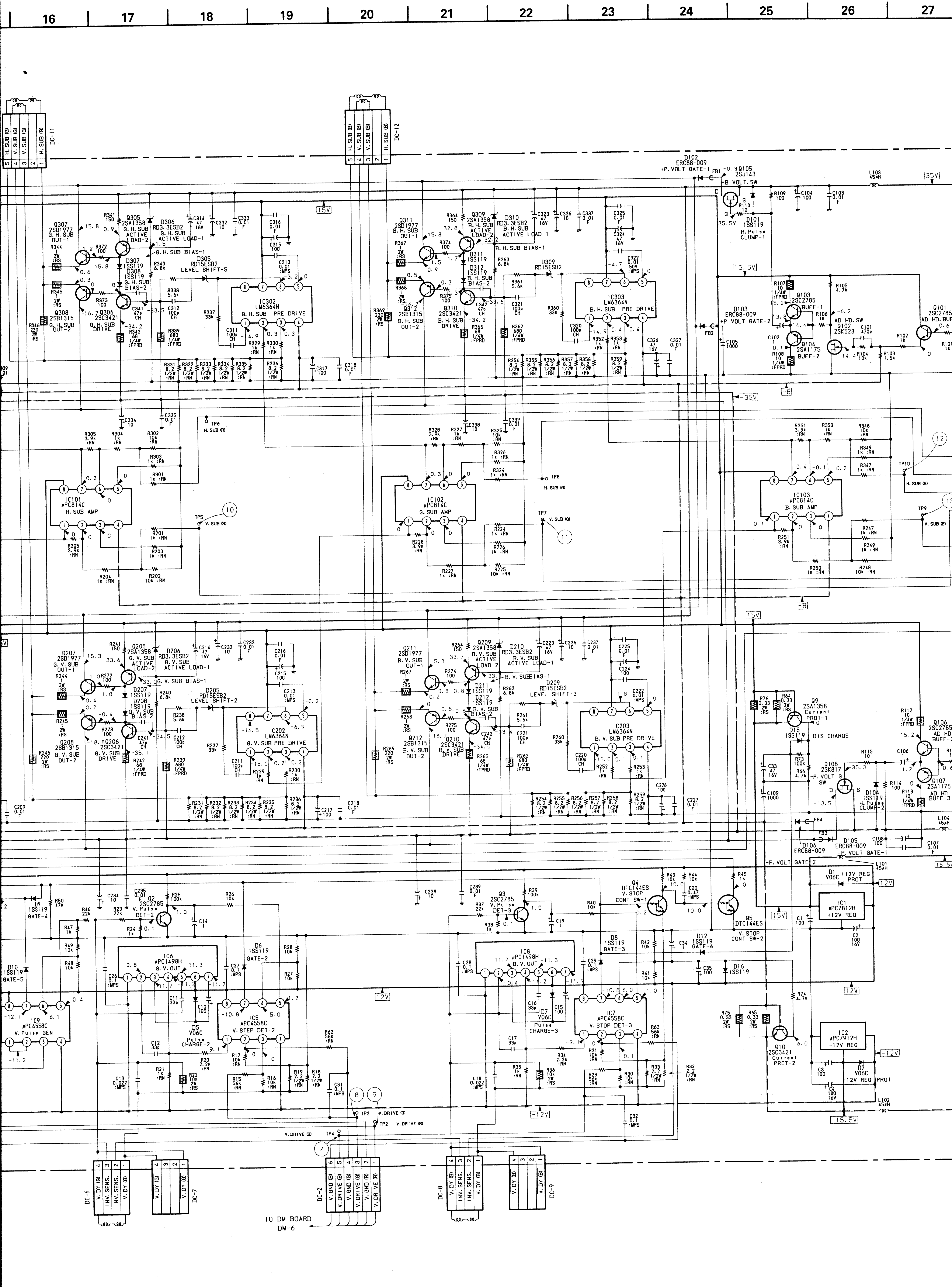


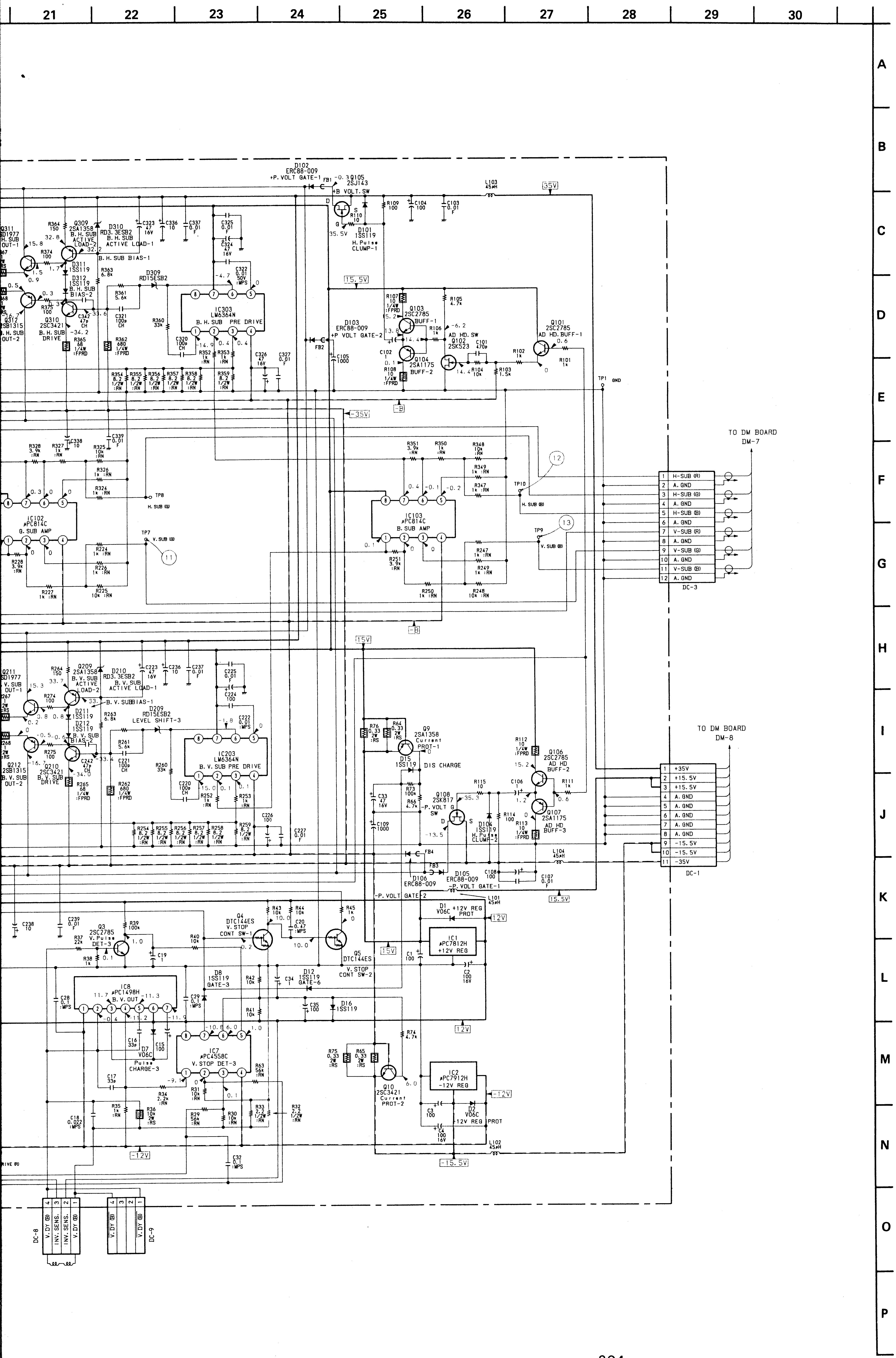
Dc
(V. OUT, SUB. OUT)

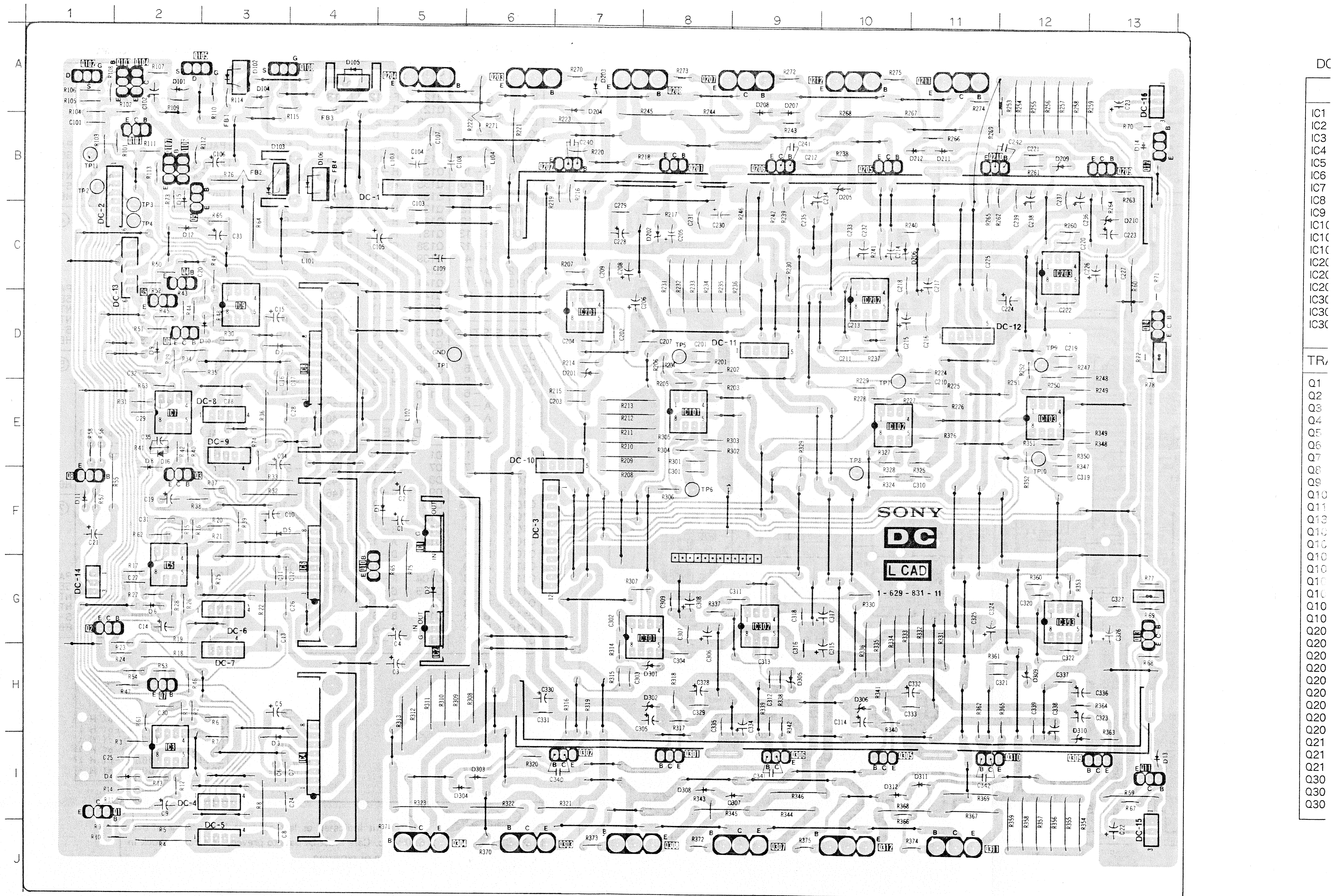


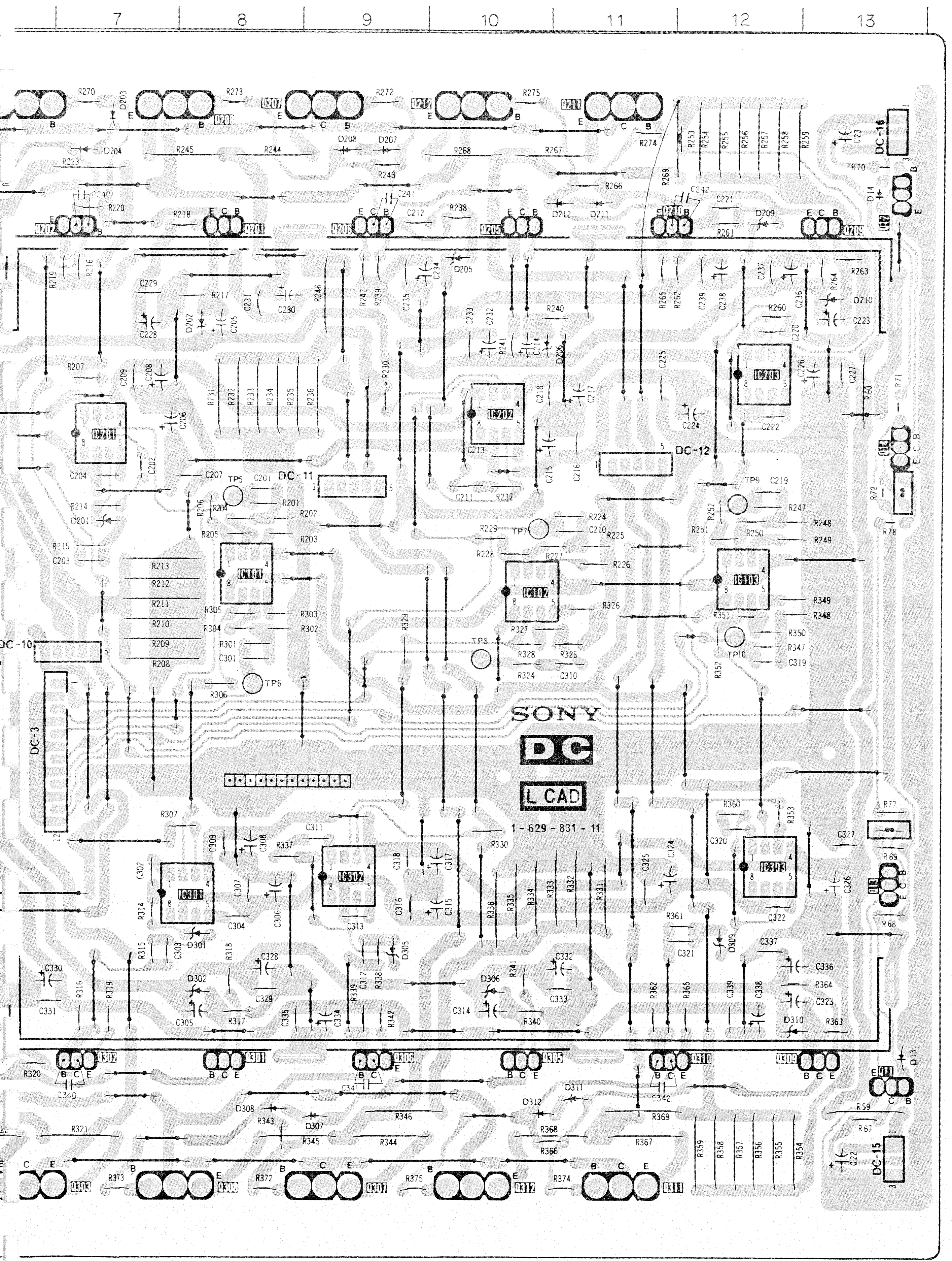
12
13
14
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18
19
20
21
22
H. SUB (R)
V. SUB (R)
V. SUB (G)
H. SUB (G)
DC-11
H. SUB (B)
V. SUB (B)
V. SUB (B)
H. SUB (B)
DC-12
15V
-35V
12V
-12V
IC301 LM6364N RH SUB PRE DRIVE
IC302 LM6364N G. H. SUB PRE DRIVE
IC101 μPC814C R. SUB AMP
IC102 μPC814C G. SUB AMP
IC201 LM6364N R. V. SUB PRE DRIVE
IC202 LM6364N G. V. SUB PRE DRIVE
IC4 μPC1498H R. V OUT
IC6 μPC1498H G. V OUT
IC8 μPC1498H B. V. OUT
IC3 μPC4558C V. STOP DET-1
IC9 μPC4558C V. Pulse GEN
IC5 μPC4558C V. STEP DET-2
Q301 2SA1358 R. H. SUB ACTIVE LOAD-2
Q302 2SC3421 R. H. SUB DRIVE
Q305 2SA1358 G. H. SUB ACTIVE LOAD-2
Q306 2SC3421 G. H. SUB DRIVE
Q307 2SD1977 G. H. SUB OUT-1
Q308 2SB1315 G. H. SUB OUT-2
Q309 2SA1358 B. H. SUB ACTIVE LOAD-2
Q310 2SC3421 B. H. SUB DRIVE
Q311 2SD1977 B. H. SUB OUT-1
Q312 2SB1315 B. H. SUB OUT-2
Q201 2SA1358 R. V. SUB ACTIVE LOAD-2
Q202 2SC3421 R. V. SUB DRIVE
Q205 2SA1358 G. V. SUB ACTIVE LOAD-2
Q206 2SC3421 G. V. SUB DRIVE
Q207 2SD1977 G. V. SUB OUT-1
Q208 2SB1315 G. V. SUB OUT-2
Q209 2SA1358 B. V. SUB ACTIVE LOAD-2
Q210 2SC3421 B. V. SUB DRIVE
Q211 2SD1977 B. V. SUB OUT-1
Q212 2SB1315 B. V. SUB OUT-2
Q1 2SC2785 V. Pulse DET-1
Q2 2SC2785 V. Pulse DET-2
Q3 2SC2785 V. Pulse DET-3
Q6 2SC2785 V. Pulse BUFF
D3 V06C Pulse CHARGE-1
D5 V06C Pulse CHARGE-2
D7 V06C Pulse CHARGE-3
D4 1SS119 GATE-1
D6 1SS119 GATE-2
D9 1SS119 GATE-4
D10 1SS119 GATE-5
D301 RD15ESB2 LEVEL SHIFT-4
D305 RD15ESB2 LEVEL SHIFT-5
D201 RD15ESB2 LEVEL SHIFT-2
D205 RD15ESB2 LEVEL SHIFT-2
D209 RD15ESB2 LEVEL SHIFT-3
TP6 H. SUB (R)
TP8 H. SUB (G)
TP5 V. SUB (R)
TP7 V. SUB (G)
TP3 V. DRIVE (G)
TP2 V. DRIVE (R)
TP4 V. DRIVE (B)
V. DY (R)
INV. SENS.
DC-5
DC-6
DC-7
DC-2
V. DRIVE (B)
V. GND (B)
V. DRIVE (G)
V. GND (G)
V. DRIVE (R)
DC-8
DC-9
TO DM BOARD DM-6


Dc
(V. OUT, SUB. OUT)
TO FAN3
DC-14
TO FAN7
DC-15
TO DM BOARD
DM-9
DC-13
AD. HD
A. GND
V. INV
FAN. STOP
V. STOP
V. PULSE
DC-10
DC-11
DC-4
DC-5
DC-6
DC-7
TO DM BOARD
DM-6
IC301 LM6364N RH SUB PRE DRIVE
IC302 LM6364N G. H. SUB PRE DRIVE
IC101 μPC814C R. SUB AMP
IC201 LM6364N R. V. SUB PRE DRIVE
IC202 LM6364N G. V. SUB PRE DRIVE
IC4 μPC1498H R. V OUT
IC3 μPC4558C V. STOP DET-1
IC9 μPC4558C V. Pulse GEN
IC6 μPC1498H G. V. OUT
IC5 μPC4558C V. STEP DET-2
Q8 DTC144ES FAN PROT-1
Q11 DTC144ES FAN PROT-2
Q13 DTC144ES
FAN PROT-3
V. INV SW
Q7 DTC144ES
Q1 2SC2785 V. Pulse DET-1
Q6 2SC2785 V. Pulse BUFF
Q2 2SC2785 V. Pulse DET-2
TP5 V. SUB (R)
TP6 H. SUB (R)
TP11
V. DRIVE (G)




21
22
23
24
25
26
27
28
29
30
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
D102 ERC88-009 +P. VOLT GATE-1
Q105 2SJ143 +B VOLT. SW
D101 1SS119 H. Pulse CLUMP-1
L103 45μH
35V
15.5V
Q309 2SA1358 B. H. SUB ACTIVE LOAD-2
D310 RD3.3ESB2 B. H. SUB ACTIVE LOAD-1
B. H. SUB BIAS-1
D309 RD15ESB2
IC303 LM6364N B. H. SUB PRE DRIVE
Q310 2SC3421 B. H. SUB DRIVE
Q312 2SB1315 H. SUB OUT-2
D103 ERC88-009 +P VOLT GATE-2
Q103 2SC2785 BUFF-1
Q104 2SA1175 BUFF-2
Q102 2SK523 AD HD. SW
Q101 2SC2785 AD HD. BUFF-1
TP1 GND
-35V
-B
IC102 μPC814C G. SUB AMP
IC103 μPC814C B. SUB AMP
TP8 H. SUB (G)
TP7 V. SUB (G)
TP10 H. SUB (B)
TP9 V. SUB (B)
TO DM BOARD DM-7
1 H-SUB (R)
2 A. GND
3 H-SUB (G)
4 A. GND
5 H-SUB (B)
6 A. GND
7 V-SUB (R)
8 A. GND
9 V-SUB (G)
10 A. GND
11 V-SUB (B)
12 A. GND
DC-3
15V
Q209 2SA1358 B. V. SUB ACTIVE LOAD-2
D210 RD3.3ESB2 B. V. SUB ACTIVE LOAD-1
B. V. SUB BIAS-1
D209 RD15ESB2 LEVEL SHIFT-3
IC203 LM6364N B. V. SUB PRE DRIVE
Q210 2SC3421 B. V. SUB DRIVE
Q212 2SB1315 B. V. SUB OUT-2
Q9 2SA1358 Current PROT-1
D15 1SS119 DIS CHARGE
Q108 2SK817 -P. VOLT SW
D104 1SS119 H. Pulse CLUMP-2
Q106 2SC2785 AD HD BUFF-2
Q107 2SA1175 AD HD BUFF-3
TO DM BOARD DM-8
1 +35V
2 +15.5V
3 +15.5V
4 A. GND
5 A. GND
6 A. GND
7 A. GND
8 A. GND
9 -15.5V
10 -15.5V
11 -35V
DC-1
D106 ERC88-009
D105 ERC88-009 -P. VOLT GATE-1
-P. VOLT GATE-2
D1 V06C +12V REG PROT
IC1 μPC7812H +12V REG
12V
Q3 2SC2785 V. Pulse DET-3
Q4 DTC144ES V. STOP CONT SW-1
Q5 DTC144ES V. STOP CONT SW-2
D8 1SS119 GATE-3
D12 1SS119 GATE-6
D16 1SS119
IC8 μPC1498H B. V. OUT
D7 V06C Pulse CHARGE-3
IC7 μPC4558C V. STOP DET-3
Q10 2SC3421 Current PROT-2
IC2 μPC7912H -12V REG
D2 V06C -12V REG PROT
-12V
-15.5V
L102 45μH
DC-8
V. DY (B)
INV. SENS.
INV. SENS.
V. DY (B)
DC-9





DC BOARD

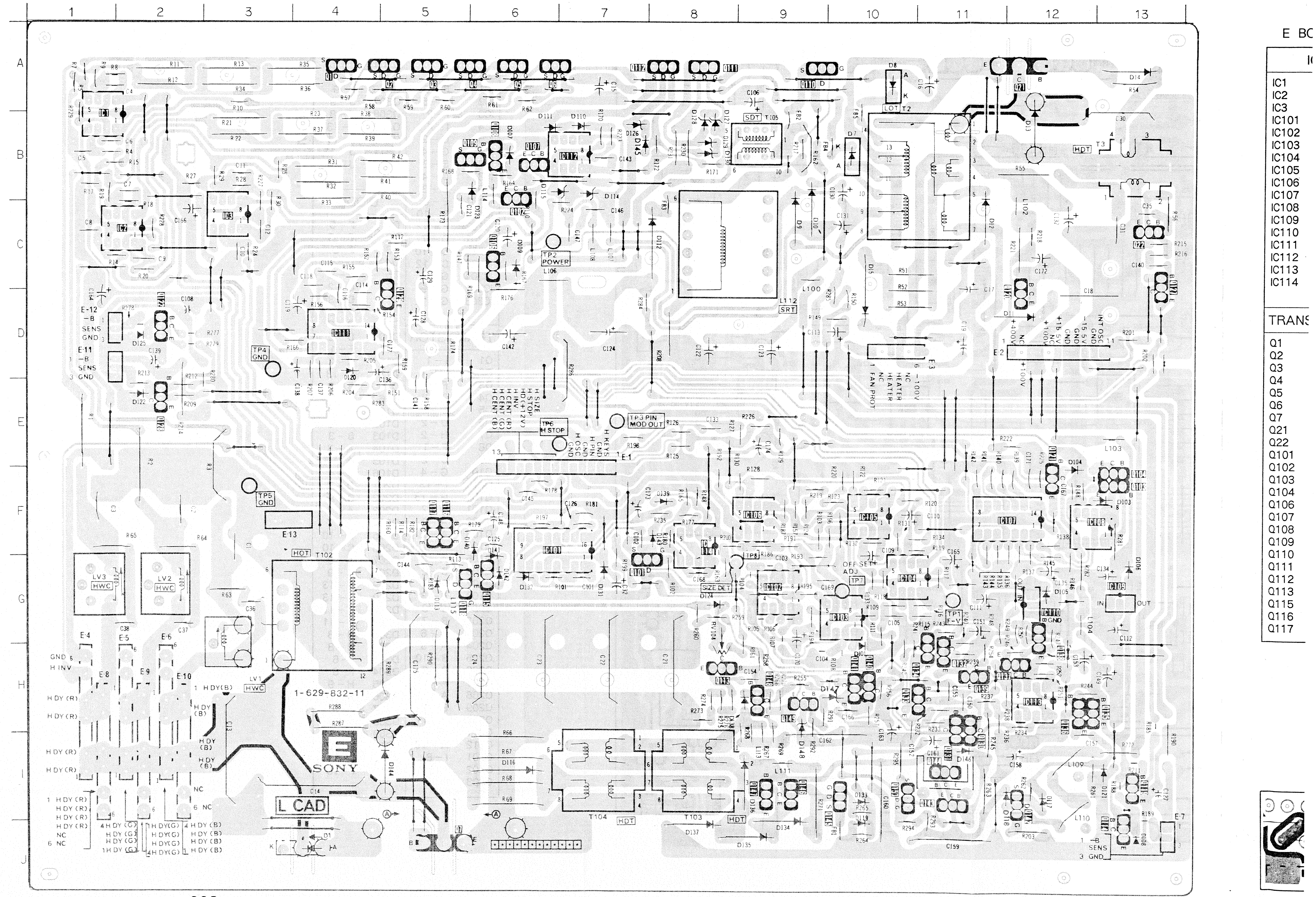
IC	
IC1	F－5
IC2	G－5
IC3	I－2
IC4	I－4
IC5	G－2
IC6	G－4
IC7	E－2
IC8	D－4
IC9	D－3
IC101	E－8
IC102	E－10
IC103	E－12
IC201	D－7
IC202	D－10
IC203	C－12
IC301	G－8
IC302	G－9
IC303	G－12

TRANSISTOR	
Q1	I－1
Q2	G－1
Q3	F－2
Q4	C－2
Q5	D－2
Q6	D－2
Q7	H－2
Q8	F－1
Q9	B－2
Q10	G－4
Q11	I－13
Q13	G－13
Q101	B－2
Q102	A－1
Q103	A－2
Q104	A－2
Q105	A－2
Q106	B－2
Q107	B－2
Q108	A－3
Q201	B－8
Q202	B－7
Q203	A－6
Q204	A－5
Q205	B－10
Q206	B－9
Q207	A－9
Q208	A－7
Q209	B－12
Q210	B－11
Q211	A－11
Q212	A－10
Q301	I－8
Q302	I－7
Q303	J－6
Q304	J－5
Q305	I－10
Q306	I－9
Q307	J－9
Q308	J－8
Q309	I－13
Q310	I－11
Q311	J－11
Q312	J－10

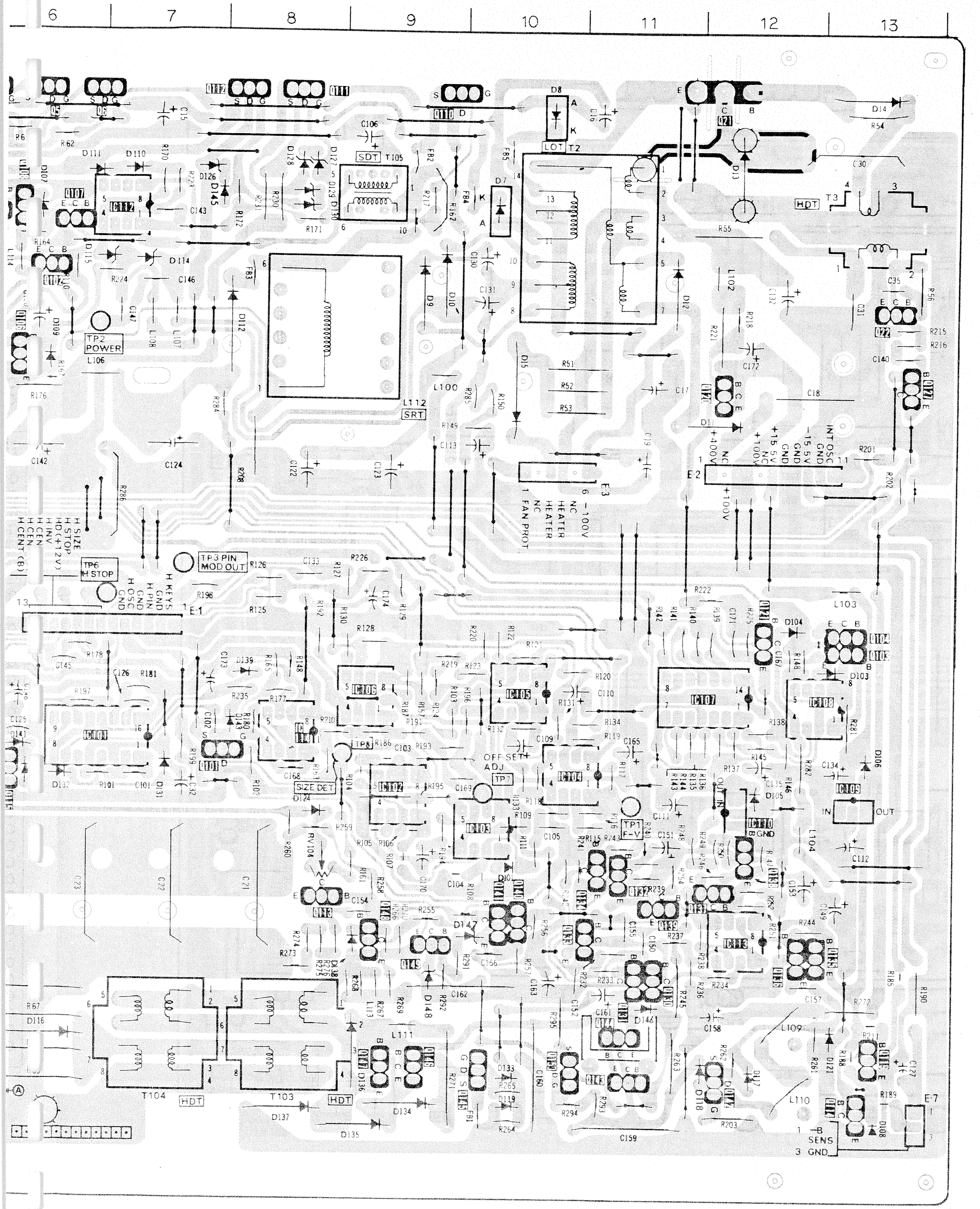
DIODE	
D1	F－5
D2	G－5
D3	I－3
D4	I－2
D5	F－3
D6	G－2
D7	D－3
D8	F－2
D9	D－2
D10	D－3
D11	F－1
D12	C－2
D13	I－13
D15	B－2
D16	E－2
D101	A－2
D102	A－3
D103	B－3
D104	A－3
D105	A－4
D106	B－4
D201	D－7
D202	C－8
D203	A－7
D204	A－7
D205	B－10
D206	C－10
D207	A－9
D208	A－9
D209	B－13
D210	C－13
D211	B－11
D212	B－11
D301	H－8
D302	H－8
D303	I－6
D304	I－6
D305	H－9
D306	H－10
D307	I－9
D308	I－8
D309	H－12
D310	I－12
D311	I－11
D312	I－10

— E Board —

E [H. OUT]



E [H. OUT]



E BOARD

IC	
IC1	B − 1
IC2	C − 2
IC3	C − 3
IC101	F − 6
IC102	G − 9
IC103	G − 10
IC104	G − 10
IC105	F − 10
IC106	F − 9
IC107	F − 12
IC108	F − 12
IC109	G − 13
IC110	G − 12
IC111	D − 4
IC112	B − 7
IC113	H − 12
IC114	F − 8

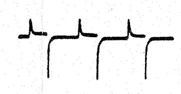
TRANSISTOR	
Q1	A − 4
Q2	A − 5
Q3	A − 5
Q4	A − 6
Q5	A − 6
Q6	A − 6
Q7	J − 5
Q21	A − 12
Q22	C − 13
Q101	G − 7
Q102	C − 6
Q103	F − 13
Q104	F − 13
Q106	C − 6
Q107	B − 6
Q108	B − 6
Q109	B − 6
Q110	A − 9
Q111	A − 8
Q112	A − 8
Q113	H − 8
Q115	G − 6
Q116	F − 5
Q117	F − 5
Q118	G − 5
Q120	D − 12
Q121	F − 12
Q127	D − 13
Q128	E − 2
Q129	D − 5
Q130	I − 11
Q131	I − 11
Q132	H − 11
Q133	H − 11
Q134	H − 11
Q135	H − 12
Q136	H − 12
Q137	H − 12
Q138	G − 12
Q139	H − 11
Q140	H − 10
Q141	H − 10
Q142	I − 12
Q143	I − 11
Q144	I − 11
Q145	I − 10
Q146	I − 9
Q147	I − 9
Q148	H − 9
Q149	H − 9
Q150	I − 10

DIODE	
D1	J − 4
D7	B − 10
D8	A − 10
D9	C − 9
D10	C − 9
D12	C − 11
D13	B − 12
D14	A − 13
D15	D − 10
D103	F − 13
D104	F − 12
D105	G − 12
D106	G − 13
D107	B − 6
D109	C − 6
D110	B − 7
D111	B − 6
D112	C − 8
D113	G − 5
D114	B − 7
D115	B − 7
D116	I − 6
D117	I − 12
D118	I − 12
D119	J − 10
D120	D − 4
D121	I − 13
D122	E − 2
D123	B − 6
D124	G − 8
D126	B − 7
D127	B − 8
D128	B − 8
D129	B − 8
D130	B − 8
D131	G − 7
D132	G − 6
D133	I − 10
D134	J − 9
D135	J − 9
D136	I − 9
D137	J − 8
D138	H − 9
D139	F − 8
D140	G − 6
D141	G − 6
D142	G − 6
D143	F − 8
D144	I − 5
D145	B − 7
D146	I − 11
D147	H − 10
D148	I − 9

VARIABLE RESISTOR	
RV104	G − 8

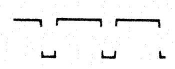
E BOARD WAVEFORMS

①



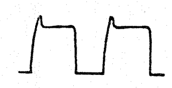
PAL 8 Vp-p(H)
SECAM 8 Vp-p(H)
NTSC3.58 8 Vp-p(H)
NTSC4.43 8 Vp-p(H)
S-VIDEO 8 Vp-p(H)
HDTV 8 Vp-p(H)

②



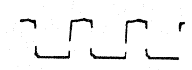
PAL 6 Vp-p(H)
SECAM 6 Vp-p(H)
NTSC3.58 6 Vp-p(H)
NTSC4.43 6 Vp-p(H)
S-VIDEO 6 Vp-p(H)
HDTV 6 Vp-p(H)

③



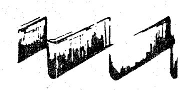
PAL 12.5 Vp-p(H)
SECAM 12.5 Vp-p(H)
NTSC3.58 12.5 Vp-p(H)
NTSC4.43 12.5 Vp-p(H)
S-VIDEO 12.5 Vp-p(H)
HDTV 12.5 Vp-p(H)

④



PAL 70 Vp-p(H)
SECAM 70 Vp-p(H)
NTSC3.58 70 Vp-p(H)
NTSC4.43 70 Vp-p(H)
S-VIDEO 70 Vp-p(H)
HDTV 90 Vp-p(H)

⑤



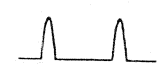
PAL 4.5Vp-p(V)
SECAM 4.5Vp-p(V)
NTSC3.58 4.5Vp-p(V)
NTSC4.43 4.5Vp-p(V)
S-VIDEO 4.5Vp-p(V)

⑤



HDTV 5.5Vp-p(V)

⑥



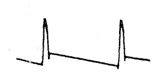
PAL 600Vp-p(H)
SECAM 600Vp-p(H)
NTSC3.58 600Vp-p(H)
NTSC4.43 600Vp-p(H)
S-VIDEO 600Vp-p(H)
HDTV 1000Vp-p(H)

⑦

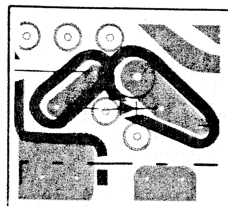


PAL 80 Vp-p(H)
SECAM 80 Vp-p(H)
NTSC3.58 80 Vp-p(H)
NTSC4.43 80 Vp-p(H)
S-VIDEO 80 Vp-p(H)
HDTV 80 Vp-p(H)

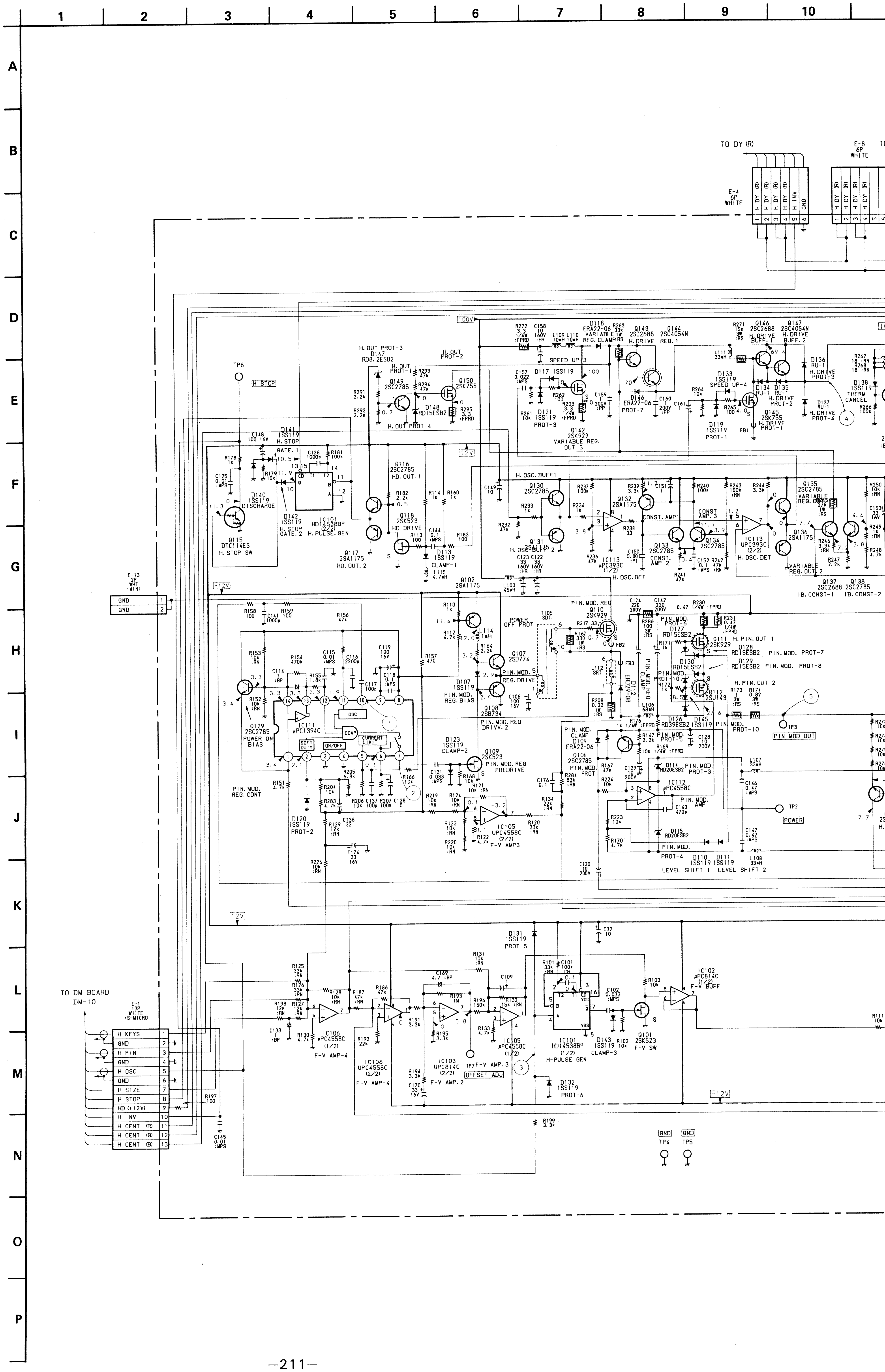
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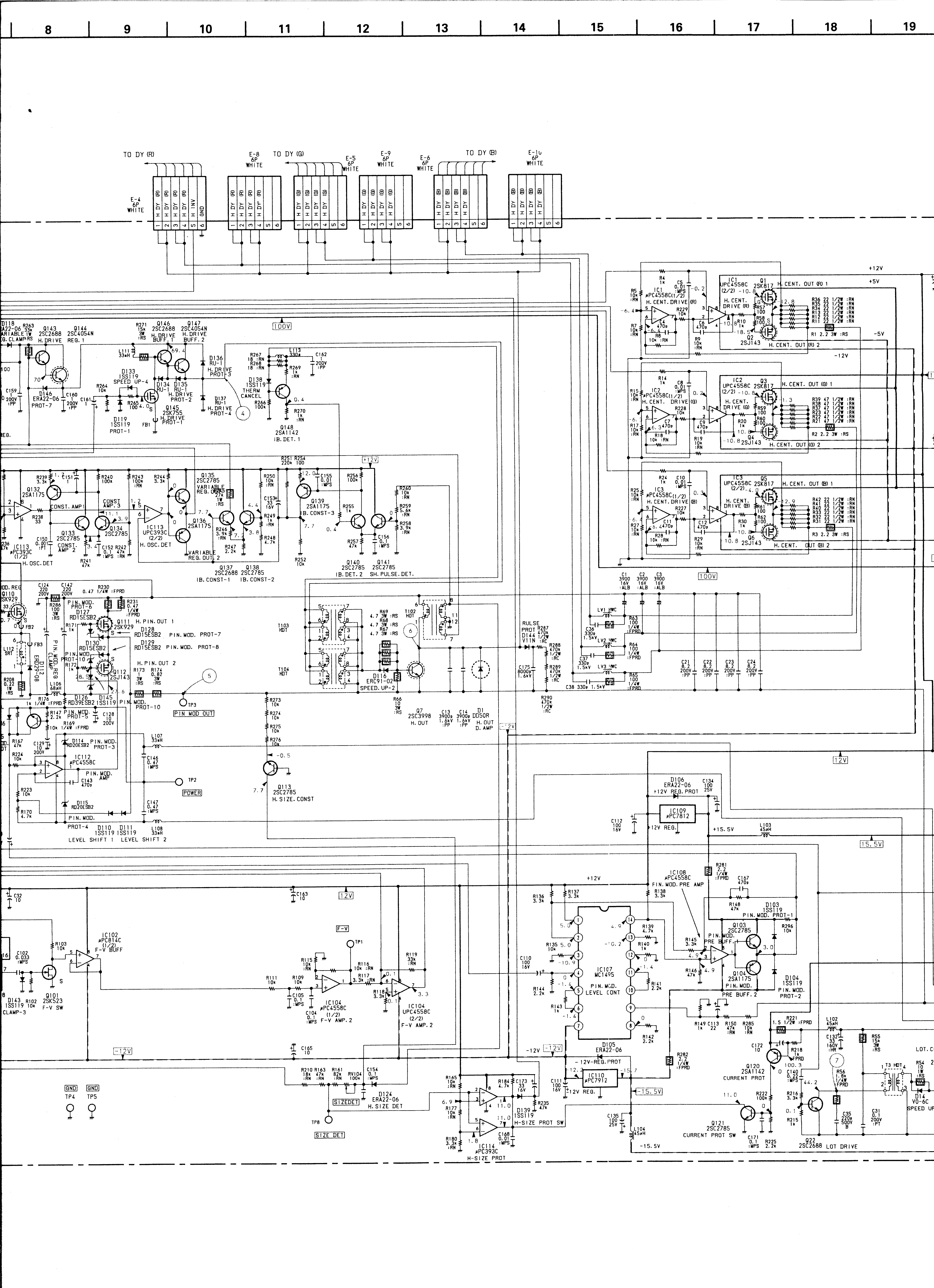


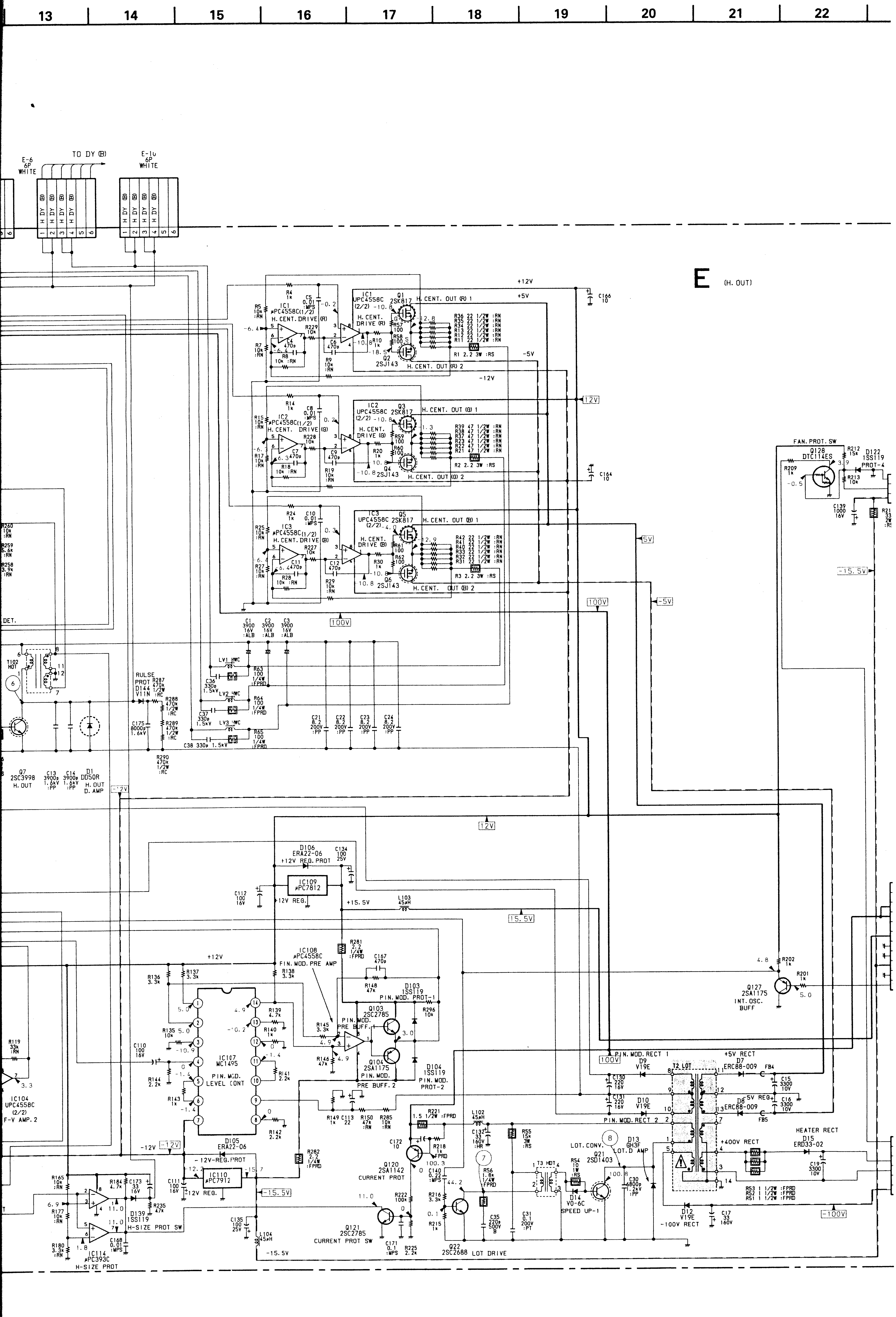
PAL 1000Vp-p(H)
SECAM 1000Vp-p(H)
NTSC3.58 1000Vp-p(H)
NTSC4.43 1000Vp-p(H)
S-VIDEO 1000Vp-p(H)
HDTV 1000Vp-p(H)

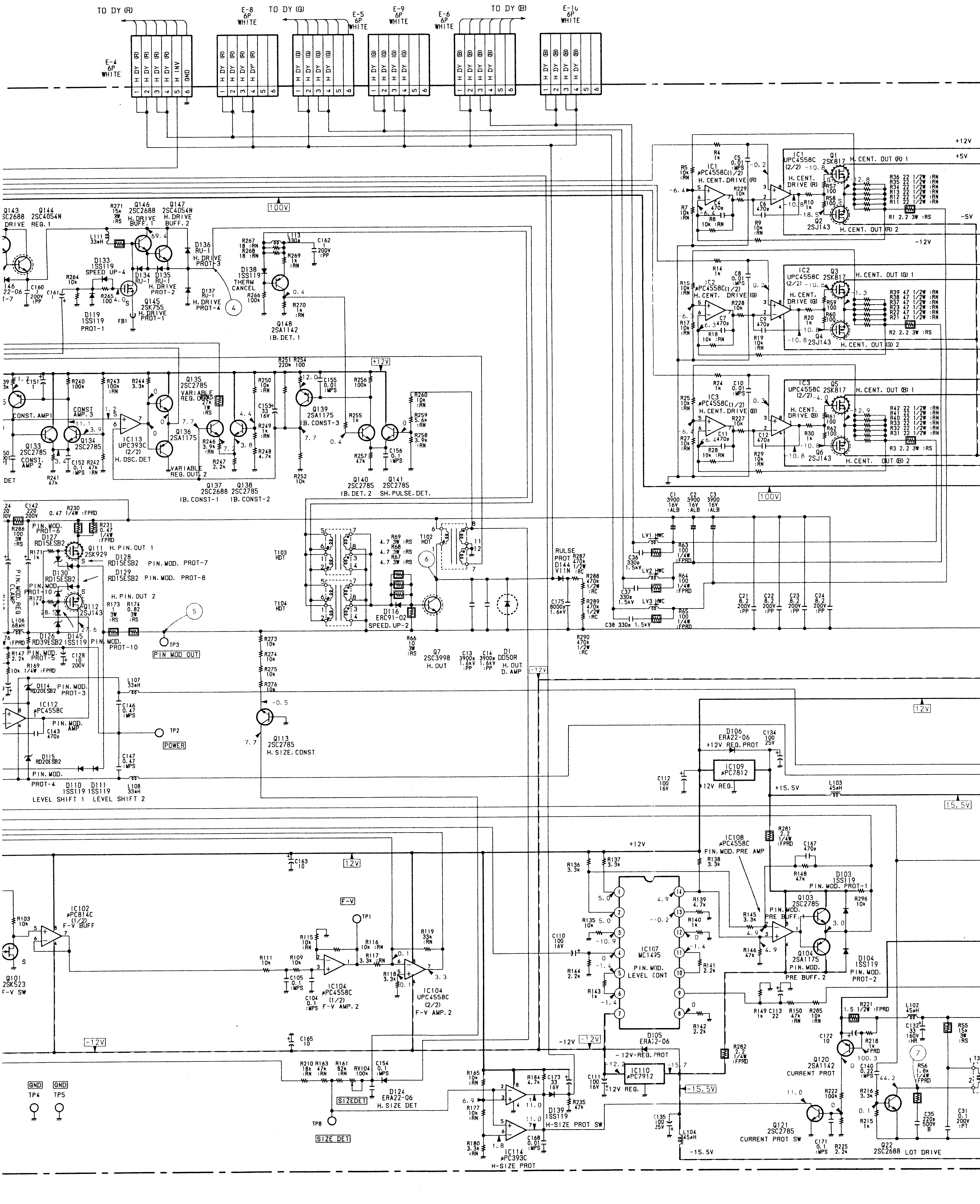


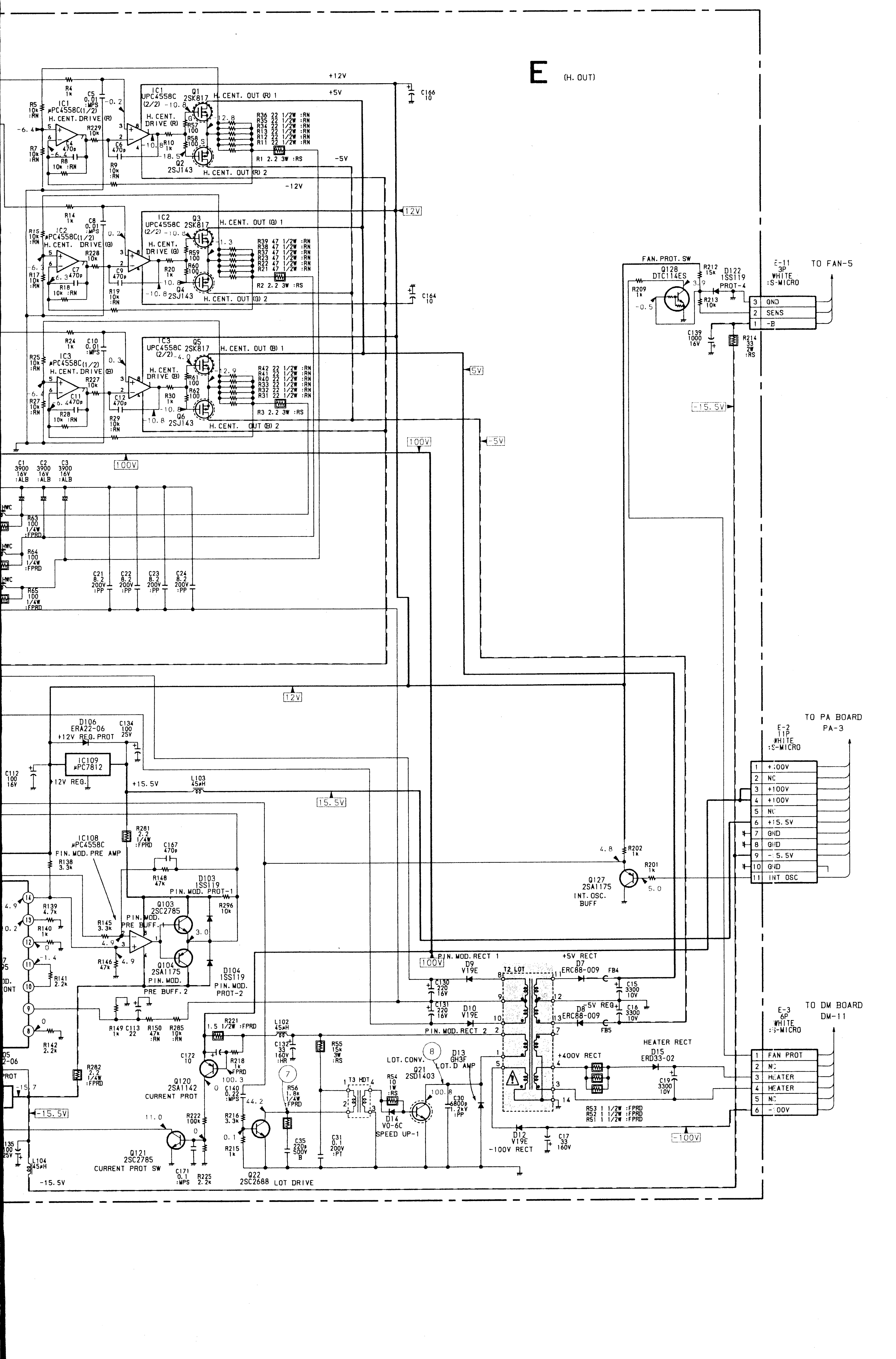
NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.


TO DY (R)
E-4 6P WHITE
E-8 6P WHITE
H DY (R)
H INV
GND
100V
12V
+12V
-12V
H STOP
TP6
E-13 2P WHT :MINI
GND
H. OUT PROT-3
H. OUT PROT-2
H. OUT PROT-4
SPEED UP-3
SPEED UP-4
H. DRIVE
H. DRIVE BUFF. 1
H. DRIVE BUFF. 2
REG. 1
VARIABLE REG. OUT 3
H. OSC. BUFF1
CONST. AMP1
CONST. AMP. 3
CONST. AMP 2
H. OSC. DET
VARIABLE REG. OUT 2
IB. CONST-1
IB. CONST-2
THERM CANCEL
IC101 HD14538BP (2/2) H. PULSE. GEN
IC111 μPC1394C
IC113 μPC393C (1/2)
IC113 UPC393C (2/2)
IC112 μPC4558C
IC105 UPC4558C (2/2) F-V AMP3
PIN. MOD. REG
PIN. MOD. REG. CONT
PIN. MOD. REG. BIAS
PIN. MOD. REG PREDRIVE
POWER OFF PROT
H. PIN. OUT 1
H. PIN. OUT 2
PIN. MOD. PROT-7
PIN. MOD. PROT-8
PIN MOD OUT
TP3
TP2
POWER
LEVEL SHIFT 1
LEVEL SHIFT 2
TO DM BOARD DM-10
E-1 13P WHITE :S-MICRO
H KEYS
H PIN
H OSC
H SIZE
HD (+12V)
H CENT (R)
H CENT (G)
H CENT (B)
IC106 μPC4558C (1/2) F-V AMP-4
IC106 UPC4558C (2/2) F-V AMP-4
IC103 UPC814C (2/2) F-V AMP. 2
TP7 F-V AMP. 3
OFFSET ADJ
IC105 μPC4558C (1/2)
IC101 HD14538BP (1/2) H-PULSE GEN
CLAMP-3
Q101 2SK523 F-V SW
IC102 μPC814C (1/2) F-V BUFF
D132 1SS119 PROT-6
GND TP4
GND TP5




13 14 15 16 17 18 19 20 21 22
E (H. OUT)
TO DY (B)
E-6 6P WHITE
E-10 6P WHITE
IC1 μPC4558C(1/2) H. CENT. DRIVE (R)
IC1 UPC4558C (2/2) H. CENT. DRIVE (R)
Q1 2SK817 H. CENT. OUT (R) 1
Q2 2SJ143 H. CENT. OUT (R) 2
IC2 μPC4558C(1/2) H. CENT. DRIVE (G)
IC2 UPC4558C (2/2) H. CENT. DRIVE (G)
Q3 2SK817 H. CENT. OUT (G) 1
Q4 2SJ143 H. CENT. OUT (G) 2
IC3 μPC4558C(1/2) H. CENT. DRIVE (B)
IC3 UPC4558C (2/2) H. CENT. DRIVE (B)
Q5 2SK817 H. CENT. OUT (B) 1
Q6 2SJ143 H. CENT. OUT (B) 2
+12V +5V -5V -12V 12V 5V -5V -15.5V 100V 15.5V -15.5V -100V
FAN. PROT. SW
Q128 DTC114ES
D122 1SS119 PROT-4
T102 HDT
Q7 2SC3998 H. OUT
D1 DD50R H. OUT D. AMP
PULSE PROT D144 V11N
D106 ERA22-06 +12V REG. PROT
IC109 μPC7812 12V REG.
IC108 μPC4558C FIN. MOD. PRE AMP
IC107 MC1495 PIN. MOD. LEVEL CONT
Q103 2SC2785 PIN. MOD. PRE BUFF. 1
Q104 2SA1175 PIN. MOD. PRE BUFF. 2
D103 1SS119 PIN. MOD. PROT-1
D104 1SS119 PIN. MOD. PROT-2
D105 ERA22-06 -12V-REG. PROT
IC110 μPC7912 12V REG.
IC104 UPC4558C (2/2) F-V AMP. 2
IC114 μPC393C H-SIZE PROT
D139 1SS119 H-SIZE PROT SW
Q120 2SA1142 CURRENT PROT
Q121 2SC2785 CURRENT PROT SW
Q22 2SC2688 LOT DRIVE
T3 HDT
D14 VO-6C SPEED UP-1
Q21 2SD1403 LOT. D AMP
LOT. CONV.
D13 GH3F
Q127 2SA1175 INT. OSC. BUFF
PIN. MOD. RECT 1
PIN. MOD. RECT 2
D9 V19E
D10 V19E
T2 LOT
+5V RECT
D7 ERC88-009
+5V REG.
D8 ERC88-009
+400V RECT
HEATER RECT
D15 ERD33-02
D12 V19E -100V RECT



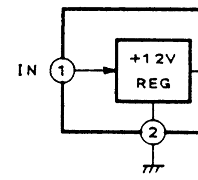


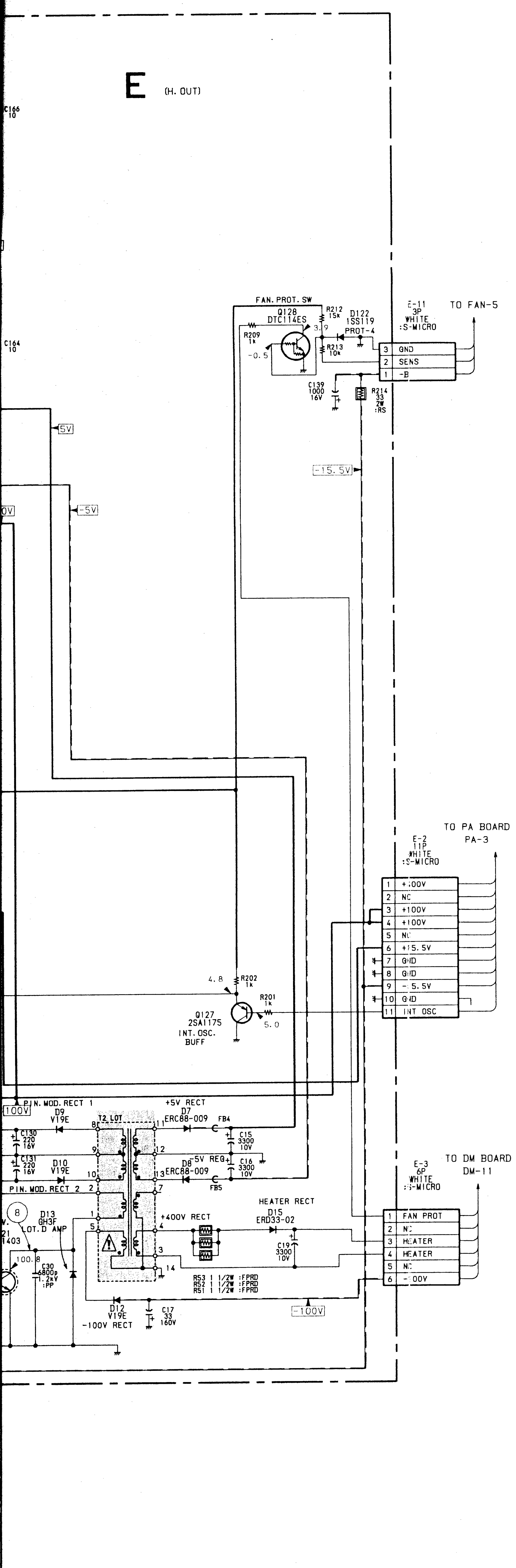
E BOARD

IC	PIN No.	PAL, SECAM, NTSC3.58, NTSC4.43, S-V
IC1	②	0.6 V
	⑦	0.6
IC2	②	0.8
	⑦	0.8
IC3	②	0.6
	⑦	0.6
IC101	④	5
	⑦	11.1
	⑪	0.8
	⑭	3.1
IC102	⑤	0.4
	⑥	0.4
IC103	⑥	1.4
IC104	①	0.9
	②	0.4
	③	0.4
IC106	①	1.4
	②	0
	③	0
	⑤	0
	⑥	0
	⑦	−3.1
IC107	⑨	−0.4
	⑩	−1.8
IC108	①	2.2
IC111	⑤	0
	⑦	4.4
	⑩	0.2
IC112	①	−28.6
	②	−27.4
	③	−27.4
IC113	②	5.1
	⑥	7.7
IC114	②	2.4
	⑤	2.4

E	IC1	μ PC4558C
	2	μ PC4558C
	3	μ PC4558C
	101	HD14538P
	102	μ PC814C
	103	μ PC814C
	104	μ PC4558C
	105	μ PC4558C
	106	μ PC4558C
	107	MC1495L
	108	μ PC4558C
	109	μ PC7812H
	110	μ PC7912H
	111	μ PC1394C
	112	μ PC4558C
	113	μ PC393C
	114	μ PC393C
	Q1	2SK817
	2	2SJ143
	3	2SK817
	4	2SJ143
	5	2SK817
	6	2SJ143
	7	2SC3998
	21	2SD1403
	22	2SC2688-L
	101	2SK523-M1
	102	2SA1175
	103	2SC2785
	104	2SA1175
	106	2SC2785
	107	2SD774-34
	108	2SD774-34
	109	2SK523-M1
	110	2SK929
	111	2SK929
	112	2SJ143
	113	2SC2785
	115	DTC114ES
	116	2SC2785
	117	2SA1175
	118	2SK523-M1
	120	2SA1142-P
	121	2SC2785
	127	2SA1175
	128	DTC114ES
	129	2SC2785
	130	2SC2785
	131	2SA1175
	132	2SA1175
	133	2SC2785
	134	2SC2785
	135	2SC2785
	136	2SA1175
	137	2SC2688-L
	138	2SC2785
	139	2SC1175
	140	2SC2785
	141	2SC2785
	142	2SK929
	143	2SC2688-L

E BOARD IC109





E BOARD

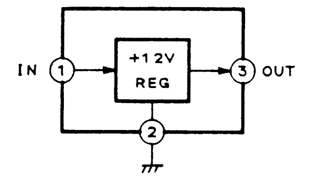
IC	PIN No.	PAL, SECAM, NTSC3.58, NTSC4.43, S-VIDEO	HDTV
IC1	②	0.6 V	0.4 V
	⑦	0.6	0.4
IC2	②	0.8	0.5
	⑦	0.8	0.5
IC3	②	0.6	0.4
	⑦	0.6	0.4
IC101	④	5	5.7
	⑦	11.1	10.1
	⑪	0.8	1.2
	⑭	3.1	1.6
IC102	⑤	0.4	0.8
	⑥	0.4	0.9
IC103	⑥	1.4	0
IC104	①	0.9	1.9
	②	0.4	0.9
	③	0.4	0.9
IC106	①	1.4	11
	②	0	4.1
	③	0	6.9
	⑤	0	4.1
	⑥	0	1.7
	⑦	− 3.1	11
IC107	⑨	− 0.4	− 0.9
	⑩	− 1.8	− 2.4
IC108	①	2.2	2.4
IC111	⑤	0	*
	⑦	4.4	3.8
	⑩	0.2	0
IC112	①	− 28.6	− 58.8
	②	− 27.4	− 57.6
	③	− 27.4	− 57.5
IC113	②	5.1	5.7
	⑥	7.7	5.4
IC114	②	2.4	4.1
	⑤	2.4	4.1

E BOARD

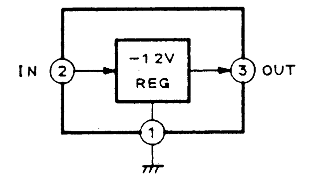
Q・No.		PAL, SECAM, NTSC3.58, NTSC4.43, S-VIDEO	HDT
Q7	B	− 25.5 V	− 56
	E	− 25	− 55
	C	− 13.7	− 19
Q21	B	*	− 0.
Q101	G	− 0.4	− 1.
Q103	B	2.2	2.4
Q104	B	2.2	2.4
Q106	B	− 27.8	− 5
	C	− 27.4	− 57.
Q109	G	− 0.8	− 1.
	S	2.7	3.7
Q111	G	− 28.5	− 58.
	D	− 13.8	− 13.
Q112	D	− 26.1	− 56.
Q116	B	0.4	0.8
	E	0.8	1.2
Q117	B	0.4	0.8
	E	0.8	1.2
Q118	G	0.6	0
	D	0.4	0.8
Q130	B	5	5.7
	E	5.1	5.7
Q131	B	5	5.7
	E	5.1	5.7
Q132	B	11.1	11.6
	C	1.2	5.4
Q133	B	1.2	5.4
Q137	C	46.9	81.9
Q139	B	11.4	11.6
Q140	E	1.1	2.3
Q141	E	1.1	2.3
Q143	B	70.5	89.6
Q144	E	69.4	88.4
Q145	G	3.9	4.4
Q146	B	39.8	44.9
	E	39.8	44.9
Q147	B	39.8	44.9
	E	39.8	44.9
Q148	B	39.4	44.6
	E	39.1	43.8
Q150	D	70.5	89.7

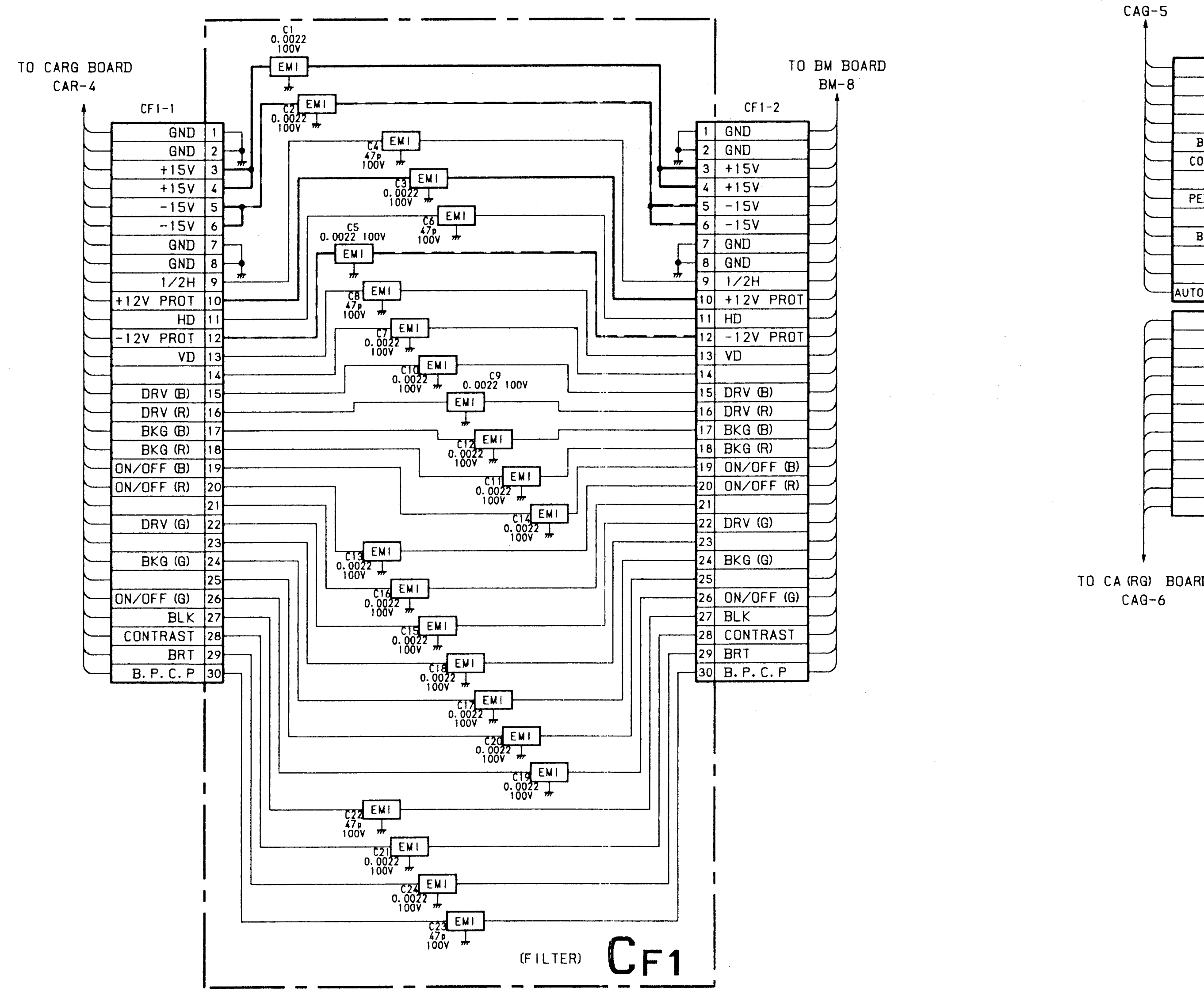
Board	Ref.	Part	Function	Ref.	Part	Function
E	IC1	μ PC4558C	H.CENT DRIVE (R)	144	2SC4054N	H.DRIVE REG-2
	2	μ PC4558C	H.CENT DRIVE (G)	145	2SK755	H.DRIVE
	3	μ PC4558C	H.CENT DRIVE (B)	146	2SC2688-L	H.DRIVE BUFF-1
	101	HD14538P	H.PULSE GEN	147	2SC4054N	H.DRIVE BUFF-2
	102	μ PC814C	F-V BUFF	148	2SA1142-P	IB DET-1
	103	μ PC814C	F-V AMP-1	149	2SC2785	H.OUT PROT-1
	104	μ PC4558C	F-V AMP-2	150	2SK755	H.OUT PROT-2
	105	μ PC4558C	F-V AMP-3			
	106	μ PC4558C	F-V AMP-4	D1	DD50R	H.OUT DAMP
	107	MC1495L	MOD LEVEL CONT	7	ERC88-009	+ 5V RECT
	108	μ PC4558C	PIN MOD PRE AMP	8	ERC88-009	− 5V RECT
	109	μ PC7812H	+ 12V REG	9	V19E	PIN MOD RECT-1
	110	μ PC7912H	− 12V REG	10	V19E	PIN MOD RECT-2
	111	μ PC1394C	PIN MOD REG CONT	11	V11N	+ 400V RECT
	112	μ PC4558C	PIN MOD AMP	12	V19E	− 100V RECT
	113	μ PC393C	H.OSC DET	13	GH-3F	LOT DAMP
	114	μ PC393C	H.SIZE PROT	14	V06C	SPEED UP-1
				15	ERD33-02	HEATER RECT
	Q1	2SK817	H.CENT OUT (R)-1	103	1SS119	PIN MOD PROT-1
	2	2SJ143	H.CENT OUT (R)-2	104	1SS119	PIN MOD PROT-2
	3	2SK817	H.CENT OUT (G)-1	105	ERA22-06	− 12V REG PROT
	4	2SJ143	H.CENT OUT (G)-2	106	ERA22-06	+ 12V REG PROT
	5	2SK817	H.CENT OUT (B)-1	107	1SS119	PIN MOD REG BIAS
	6	2SJ143	H.CENT OUT (B)-2	109	ERA22-06	PIN MOD CLAMP
	7	2SC3998	H.OUT	110	1SS119	LEVEL SHIFT-1
	21	2SD1403	LOT CONV	111	1SS119	LEVEL SHIFT-2
	22	2SC2688-L	LOT DRIVE	112	ERD29-08J	PIN MOD REG CLAM
	101	2SK523-M1	F-V SW	113	1SS119	CLAMP-1
	102	2SA1175	POWER OFF PORT	114	RD20ESB2	PIN MOD PROT-3
	103	2SC2785	PIN MOD PRE BUFF-1	115	RD20ESB2	PIN MOD PROT-4
	104	2SA1175	PIN MOD PRE BUFF-2	116	ERC91-02	SPEED UP-2
	106	2SC2785	PIN MOD PROT	117	1SS119	SPEED UP-3
	107	2SD774-34	PIN MOD REG DRIVE-1	118	ERA22-06	VARIABLE REG CLAM
	108	2SD774-34	PIN MOD REG DRIVE-2	119	1SS119	PROT-1
	109	2SK523-M1	PIN MOD REG PRE DRIVE	120	1SS119	PROT-2
	110	2SK929	PIN MOD REG	121	1SS119	PROT-3
	111	2SK929	H.PIN OUT-1	122	1SS119	PROT-4
	112	2SJ143	H.PIN OUT-2	123	1SS119	CLAMP-2
	113	2SC2785	H.SIZE CONST	124	ERA22-06	H.SIZE DET
	115	DTC114ES	H.STOP SW	126	RD39ESB2	PIN MOD DET
	116	2SC2785	HD OUT-1	127	RD15ESB2	PIN MOD PROT-6
	117	2SA1175	HD OUT-2	128	RD15ESB2	PIN MOD PROT-7
	118	2SK523-M1	HD DRIVE	129	RD15ESB2	PIN MOD PROT-8
	120	2SA1142-P	CURRENT PROT	130	RD15ESB2	PIN MOD PROT-9
	121	2SC2785	CURRENT PROT SW	131	1SS119	PROT-5
	127	2SA1175	INT OSC BUFF	132	1SS119	PROT-6
	128	DTC114ES	FAN PORT SW	133	1SS119	SPEED UP-4
	129	2SC2785	POWER ON BIAS	134	RU-1	H.DRIVE PROT 1
	130	2SC2785	H.OSC BUFF-1	135	RU-1	H.DRIVE PROT 2
	131	2SA1175	H.OSC BUFF-2	136	RU-1	H.DRIVE PROT 3
	132	2SA1175	CONST AMP-1	137	RU-1	H.DRIVE PROT 4
	133	2SC2785	CONST AMP-2	138	1SS119	THERM CANCEL
	134	2SC2785	CONST AMP-3	139	1SS119	H.SIZE PROT SW
	135	2SC2785	VARIABLE REG OUT-1	140	1SS119	DIS CHARGE
	136	2SA1175	VARIABLE REG OUT-2	141	1SS119	H.STOP GATE-1
	137	2SC2688-L	IB CONST-1	142	1SS119	H.STOP GATE-2
	138	2SC2785	IB CONST-2	143	1SS119	CLAMP-3
	139	2SC1175	IB CONST-3	144	V11N-52	PULSE PROT
	140	2SC2785	IB DET-2	145	1SS119	PIN MOD PROT-10
	141	2SC2785	PULSE DET	146	ERA22-06	PROT-7
	142	2SK929	VARIABLE REG OUT-3	147	RD8.2ESB2	H.OUT PROT-3
	143	2SC2688-L	H.DRIVE REG-1	148	RD15ESB2	H.OUT PROT-4

E BOARD IC109 μPC7812



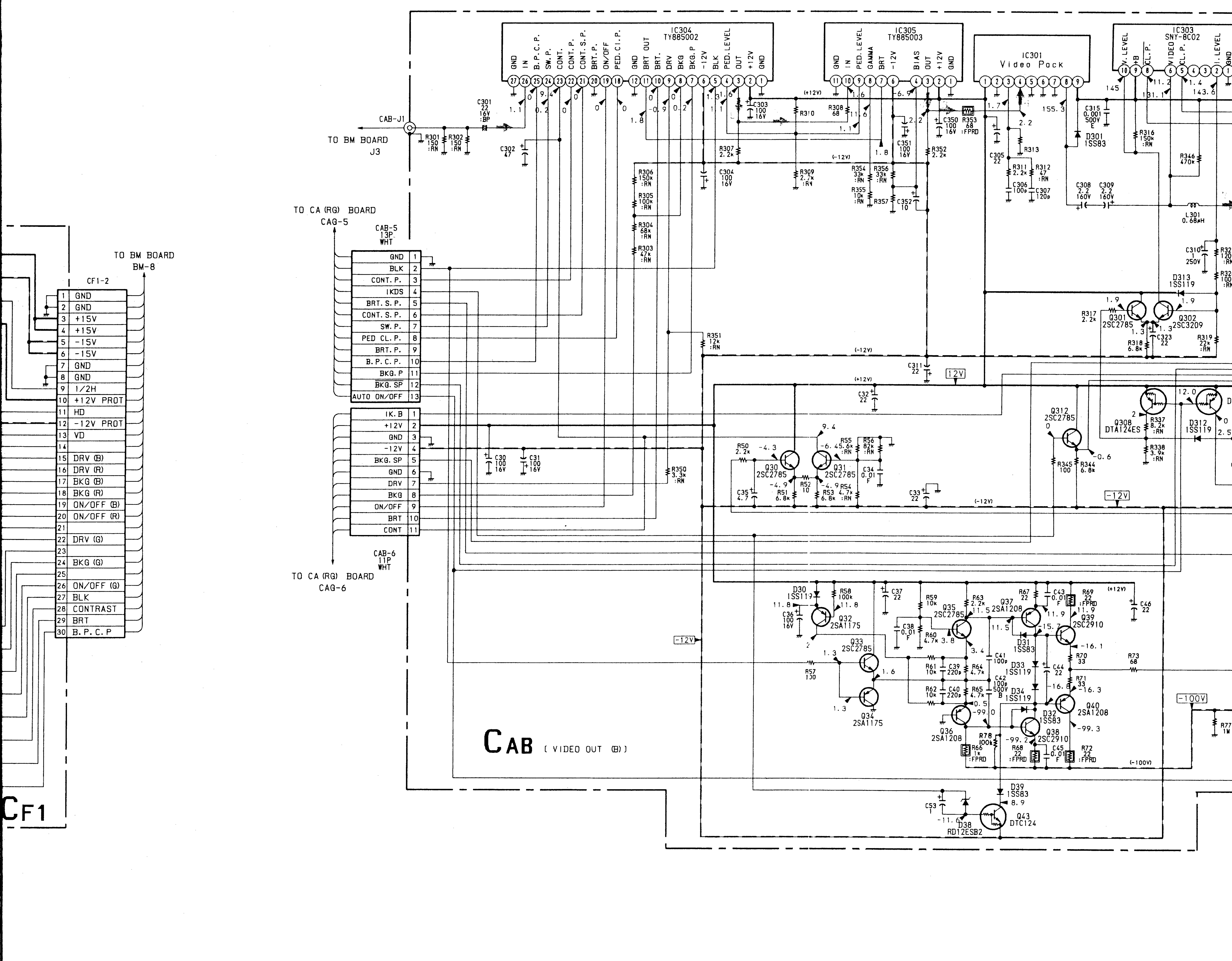
E BOARD IC110 μPC7912

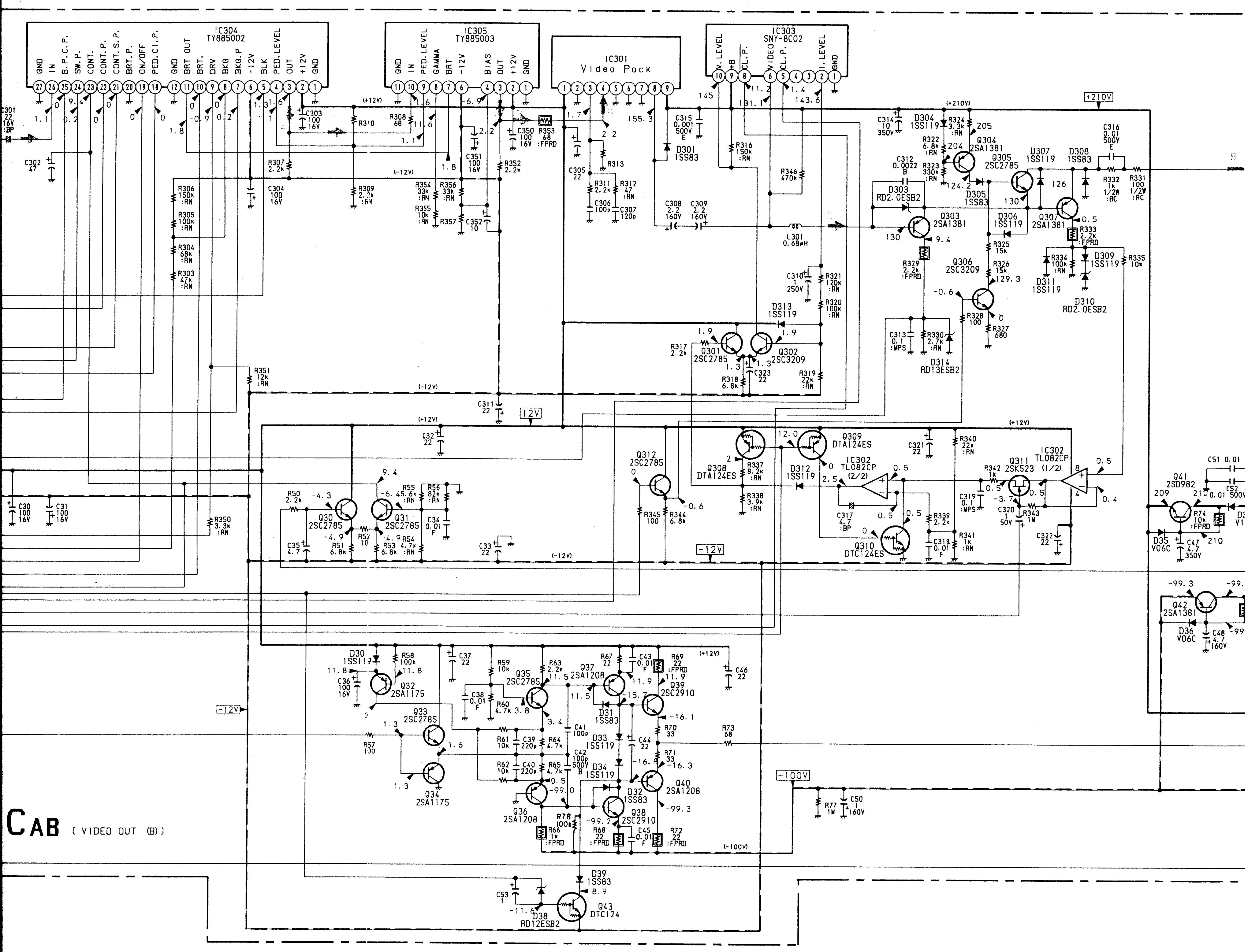




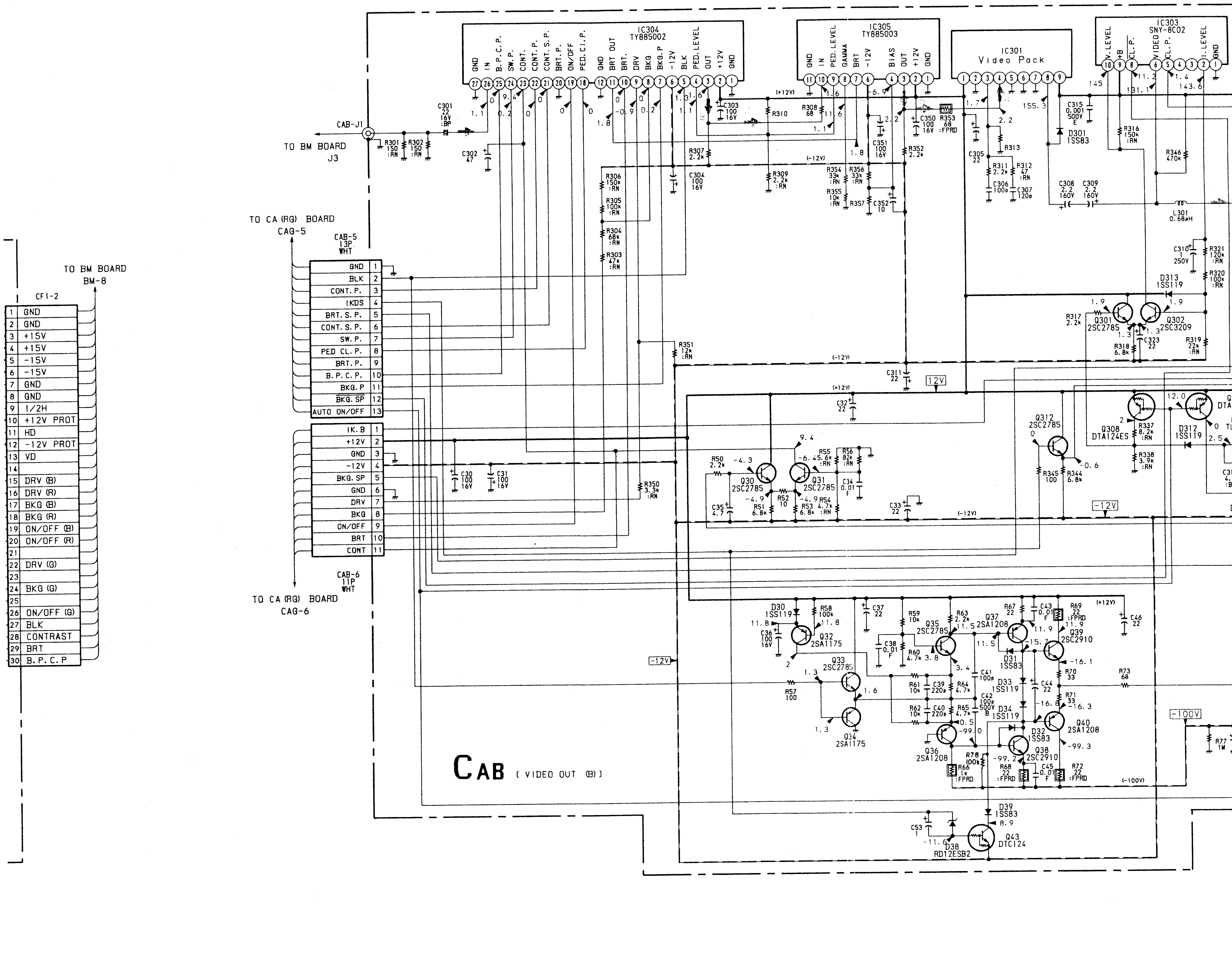
TO CARG BOARD
CAR-4
CF1-1
GND
+15V
-15V
1/2H
+12V PROT
HD
-12V PROT
VD
DRV (B)
DRV (R)
BKG (B)
BKG (R)
ON/OFF (B)
ON/OFF (R)
DRV (G)
BKG (G)
ON/OFF (G)
BLK
CONTRAST
BRT
B.P.C.P
TO BM BOARD
BM-8
CF1-2
EMI
(FILTER)
CF1
TO BM BO
TO CA (RG) BOAR
CAG-5
TO CA (RG) BOAR
CAG-6

8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19



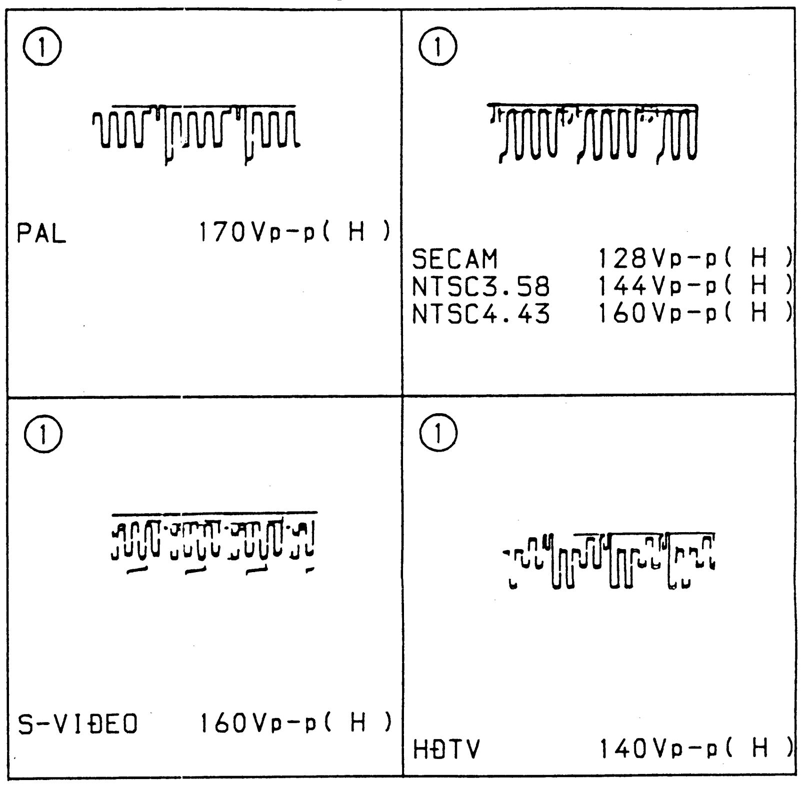


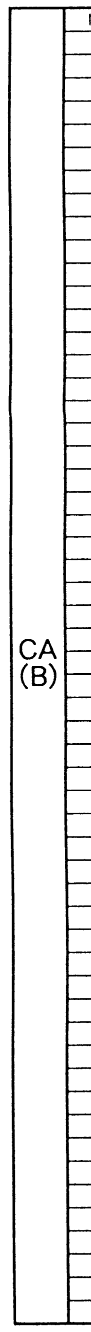
CAB (VIDEO OUT (B))

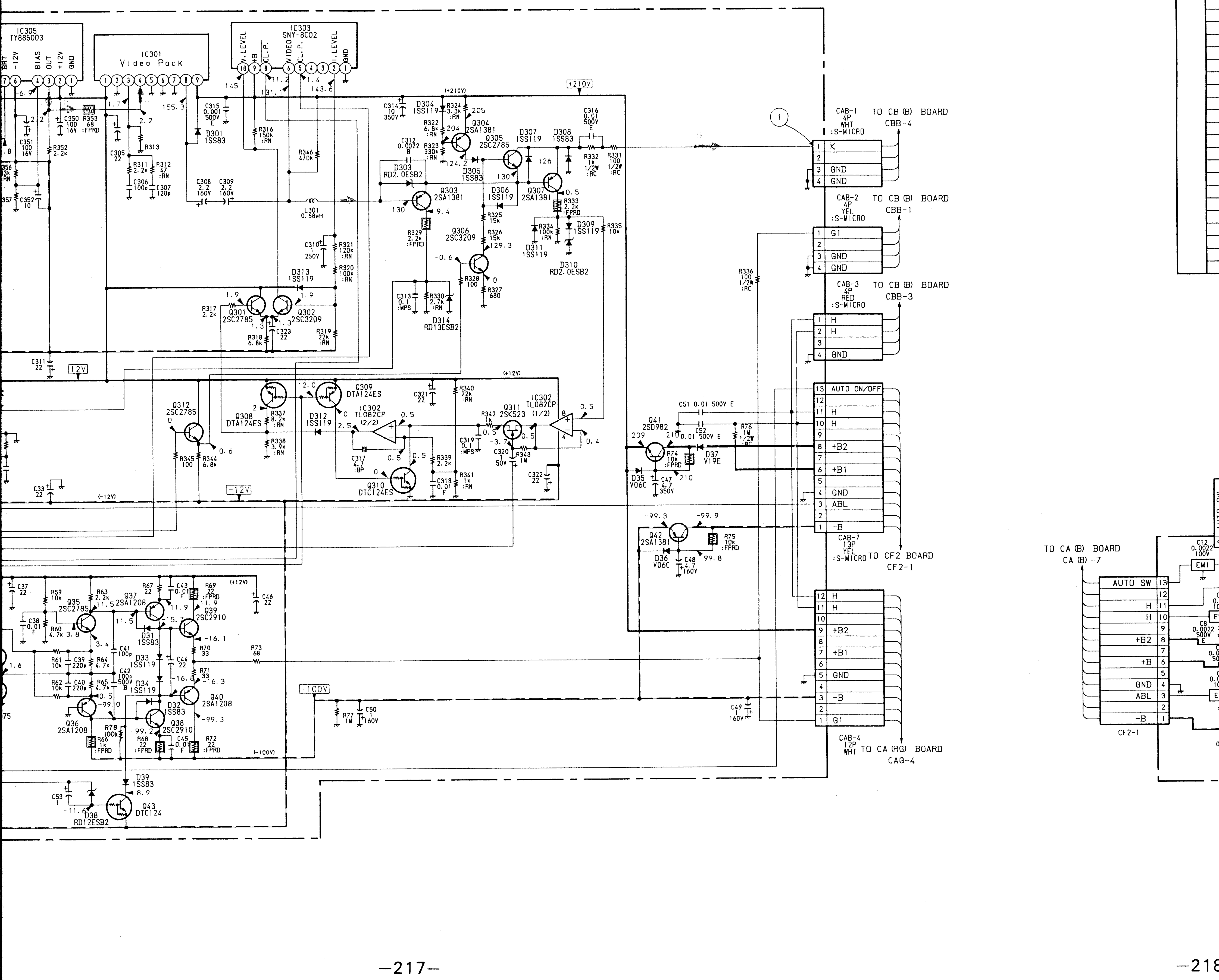


IC304 TY885002
IC305 TY885003
IC301 Video Pack
IC303 SNY-8C02
CAB-J1
TO BM BOARD J3
TO CA (RG) BOARD CAG-5
CAB-5 13P WHT
TO BM BOARD BM-8
CF1-2
TO CA (RG) BOARD CAG-6
CAB-6 11P WHT
CAB (VIDEO OUT (B))

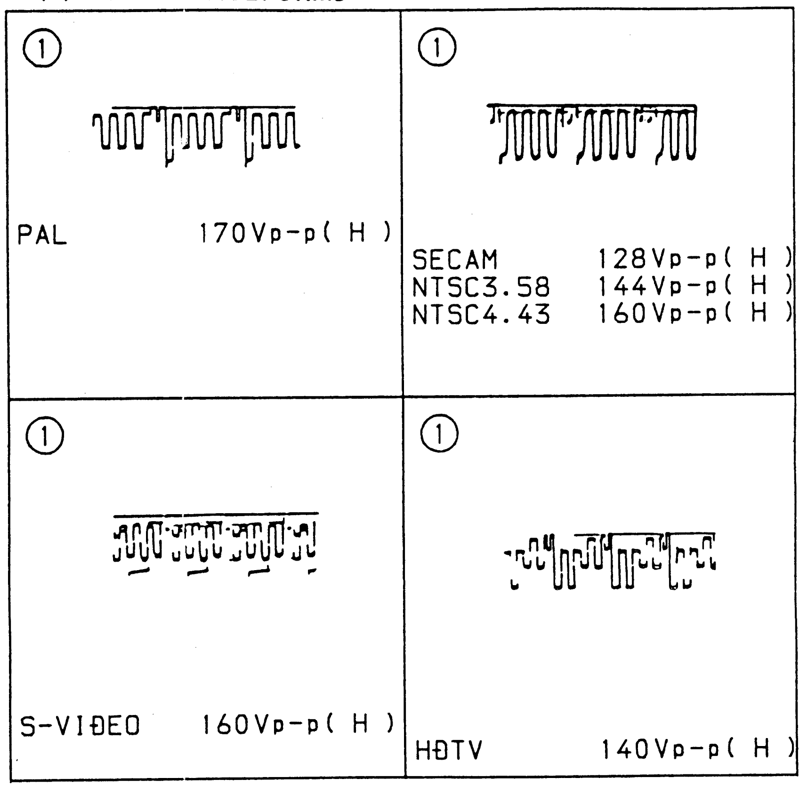
CA(B) BOARD WAVEFORMS



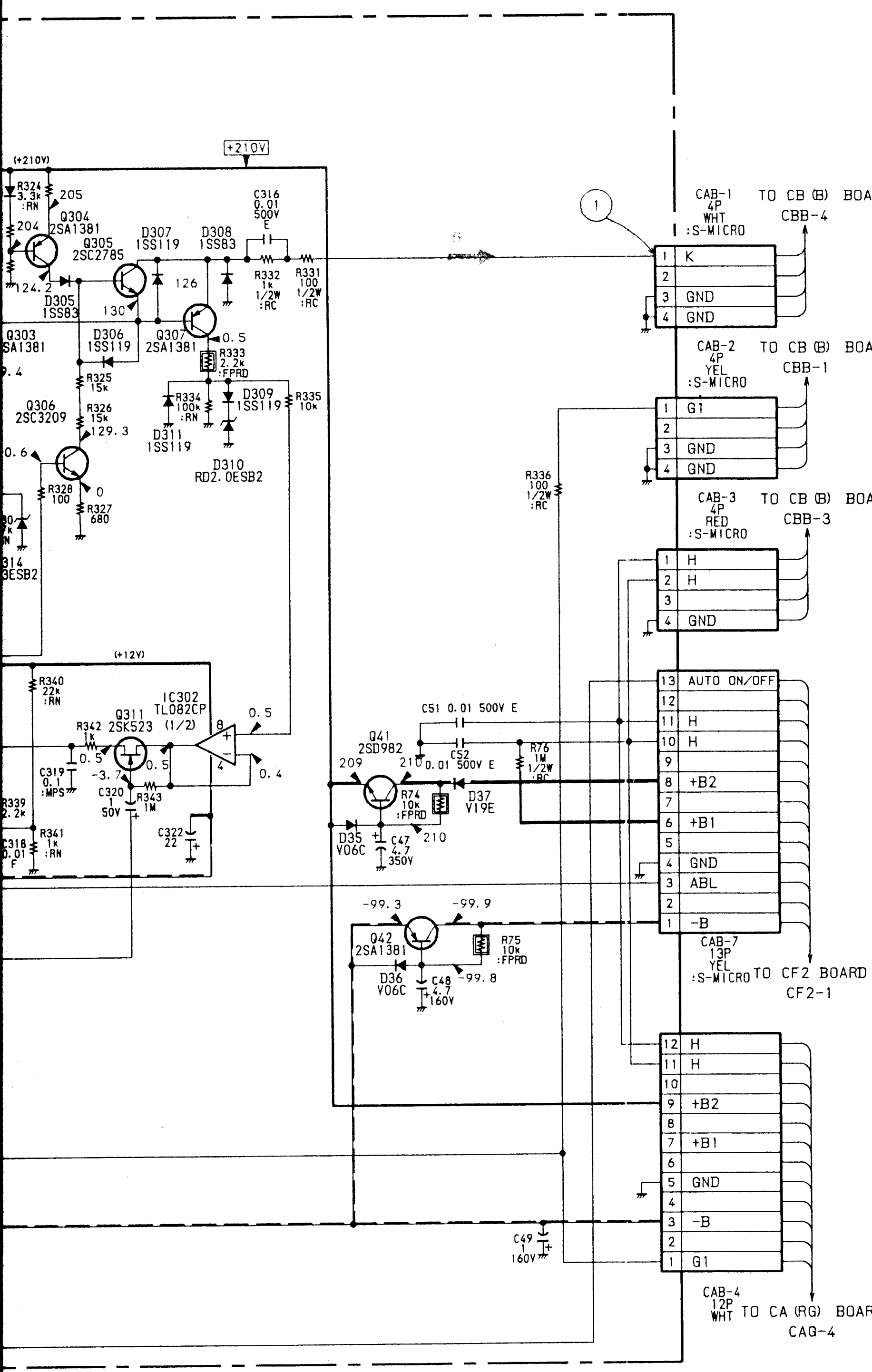


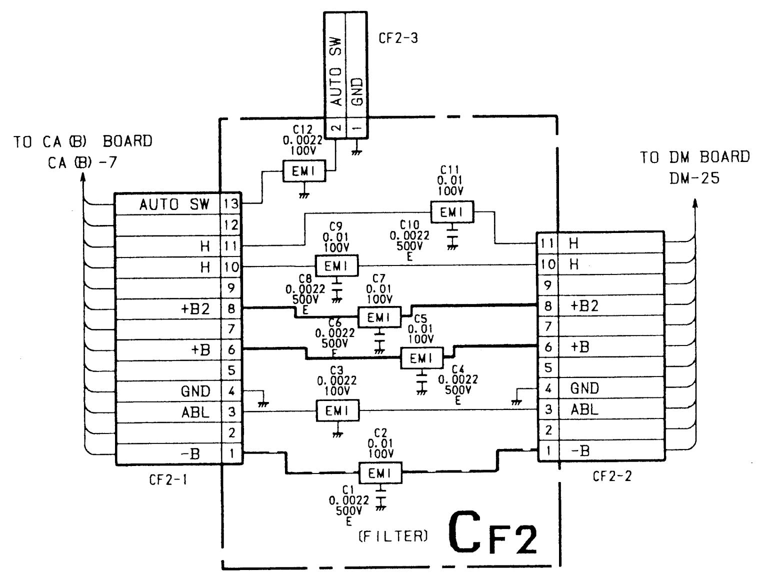


CA(B) BOARD WAVEFORMS



Board	Ref.	Part	Function
CA (B)	IC301	VPH05	B VIDEO OUT
	302	TL082CP	B AUTO BKG
	303	SNY-8C02	B CLAMP
	304	TY885002	B SIGNAL PROCESS
	305	TY885003	B γ CORR.
	Q30	2SC2785	Σ ABL
	31	2SC2785	Σ ABL
	32	2SA1175	OFF SPOT PROT
	33	2SC2785	BLK
	34	2SA1175	BLK
	35	2SC2785	BLK
	36	2SA1208	BLK
	37	2SA1208	BLK
	38	2SC2910	BLK
	39	2SC2910	BLK
	40	2SA1208	BLK
	41	2SD982	+210V RIPPLE FILTER
	42	2SA1381	−100V RIPPLE FILTER
	43	DTC124ES	BRT PULSE GEN
	301	2SC2785	B CLAMP
	302	2S3209	B CLAMP
	303	2SA1381	B IK DET-1
	304	2SA1381	B CURRENT SOURCE
	305	2SC2785	B IK DET-2
	306	2SC3209	B IK DET-2
	307	2SA1381	B IK DET-2
	308	DTA124ES	B AUTO BKG SW
	309	DTA124ES	B AUTO BKG SW
	310	DTC124ES	B AUTO BKG SW
	311	2SK523	B AUTO BKG
	312	2SC2785	B IK DET-2
	D30	1SS119	OFF SPOT PROT
	31	1SS83	BLK
	32	1SS83	BLK
	33	1SS119	BLK
	34	1SS119	BLK
	35	V06C	+12V RIPPLE FILTER PROT
	36	V06C	−100V RIPPLE FILTER PROT
	37	V19E	+210V RIPPLE FILTER PROT
	38	RD12ESB2	BRT PULSE GEN
	39	1SS83	BRT PULSE GEN
	301	1SS83	B VIDEO OUT PROT
	303	RD2.0ESB2	B IK DET-1 PROT
	304	1SS119	B THERM COMP
	305	1SS83	B IK DET-2 PROT
	306	1SS119	B IK DET-2 PROT
	307	1SS119	B IK DET-2 PROT
	308	1SS83	B VIDEO OUT PROT
	309	1SS119	B IK DET-2 PROT
	310	RD2.0ESB2	B IK DET-2 PROT
	311	1SS119	B IK DET-2 PROT
	312	1SS119	B AUTO BKG SW
	313	1SS119	B OFF SPOT PROT
	314	RD13ESB2	B IK DET-2 PROT
	315	RD3.3ESB2	B DRV



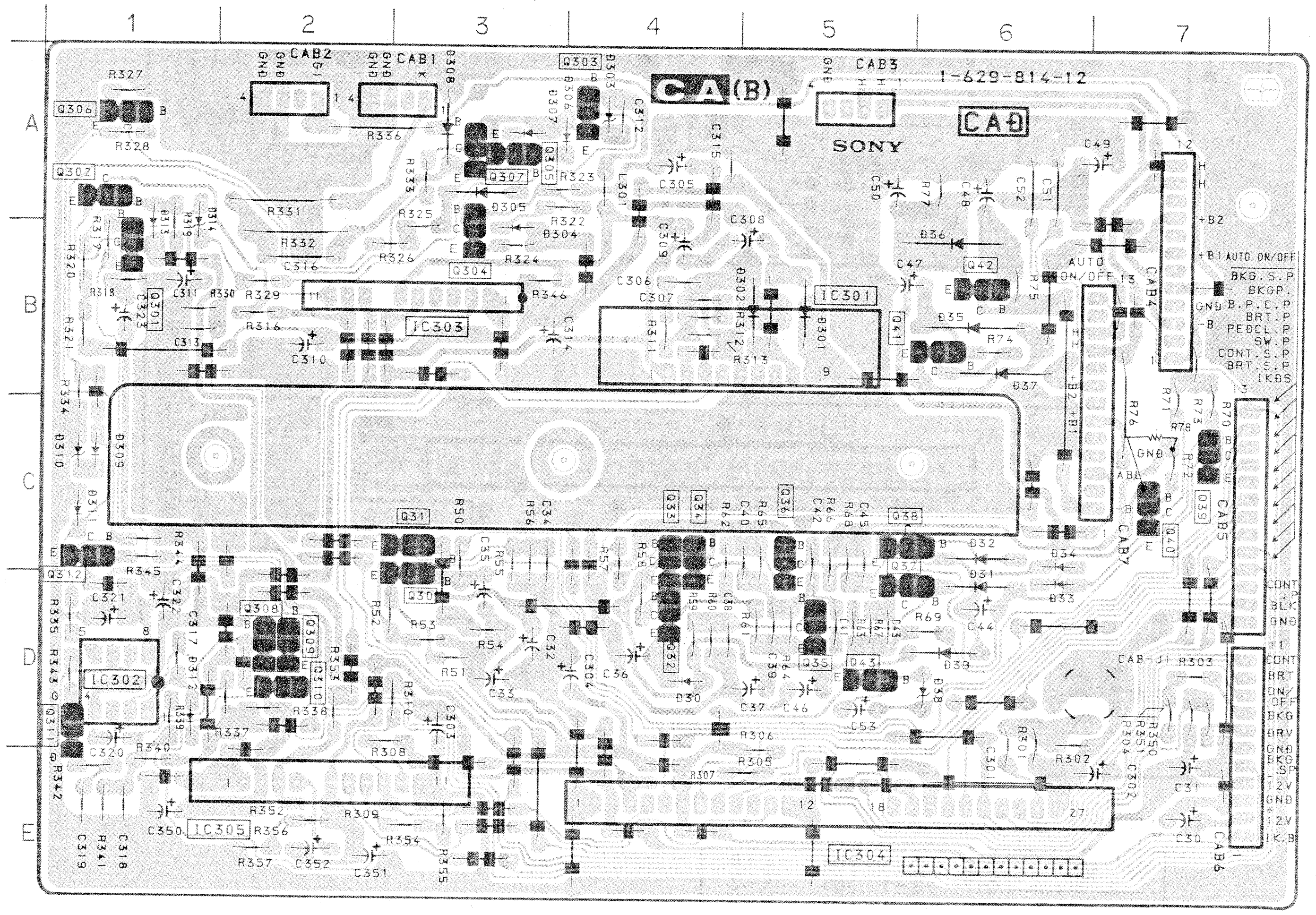


CA(B) [VIDEO OUT(B)]

CF-1 [FILTER]

CF-2 [FILTER]

– CA(B) board –



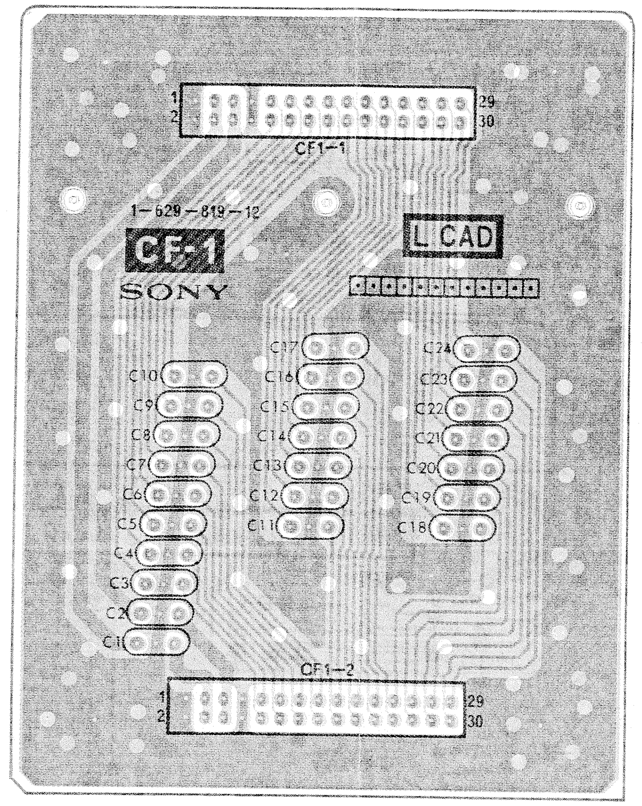
CA (B) BOARD

IC	
IC301	B – 5
IC302	D – 1
IC303	B – 3
IC304	E – 5
IC305	E – 2

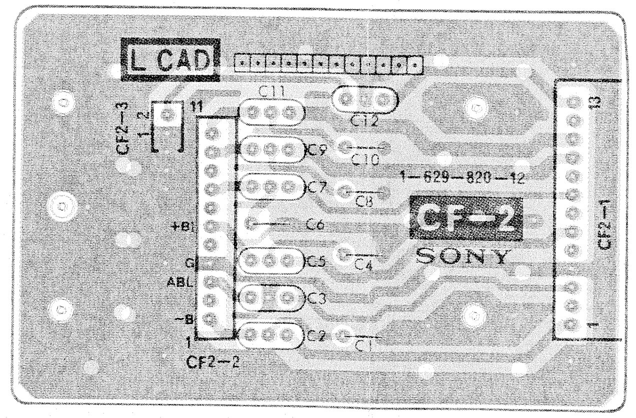
TRANSISTOR	
Q30	D – 3
Q31	C – 3
Q32	D – 4
Q33	C – 4
Q34	C – 4
Q35	D – 5
Q36	C – 5
Q37	D – 5
Q38	C – 5
Q39	C – 7
Q40	C – 7
Q41	B – 6
Q42	B – 6
Q43	D – 5
Q301	B – 1
Q302	A – 1
Q303	A – 4
Q304	B – 3
Q305	A – 3
Q306	A – 1
Q307	A – 3
Q308	D – 2
Q309	D – 2
Q310	D – 2
Q311	D – 1
Q312	C – 1

DIODE	
D30	D – 4
D31	D – 6
D32	C – 6
D33	D – 6
D34	C – 6
D35	B – 6
D36	B – 6
D37	B – 6
D38	D – 6
D39	D – 6
D301	B – 5
D303	A – 4
D304	B – 3
D305	A – 3
D306	A – 3
D307	A – 3
D308	A – 3
D309	C – 1
D310	C – 1
D311	C – 1
D312	D – 1
D313	B – 1
D314	B – 1

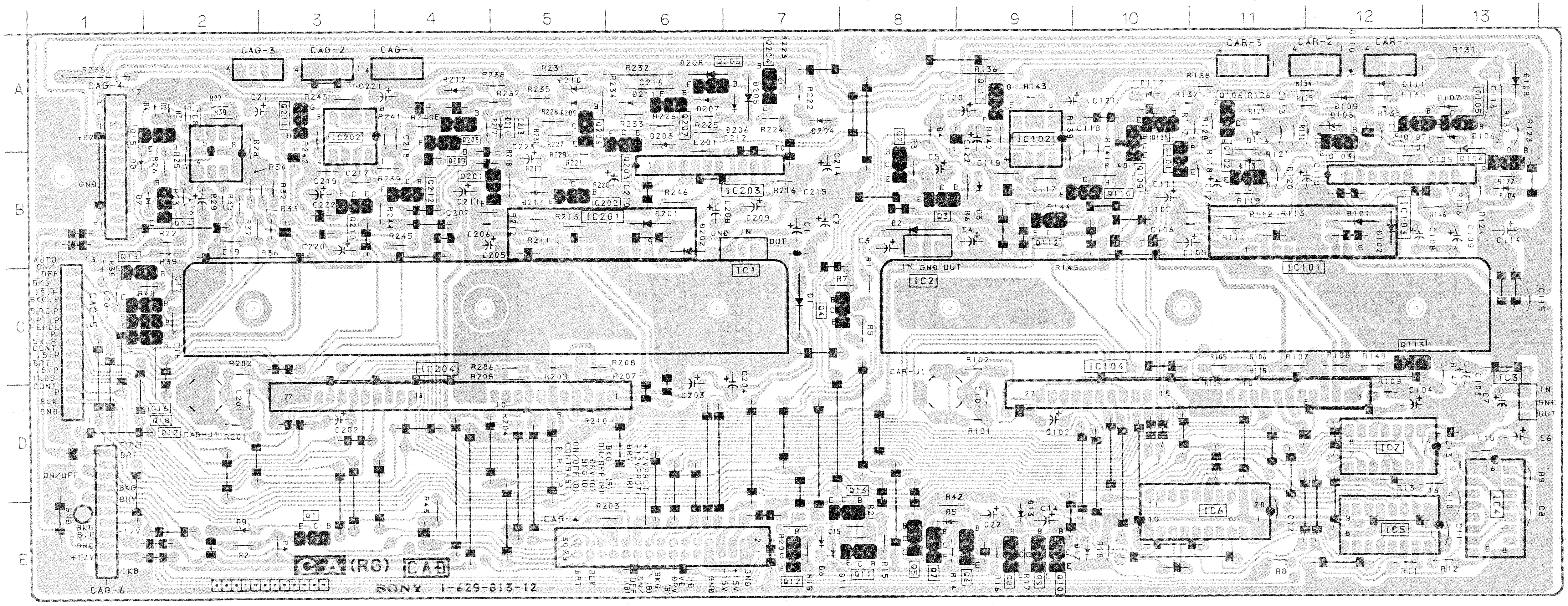
– CF1 Board –



– CF2 Board –



– CA(RG) Board –

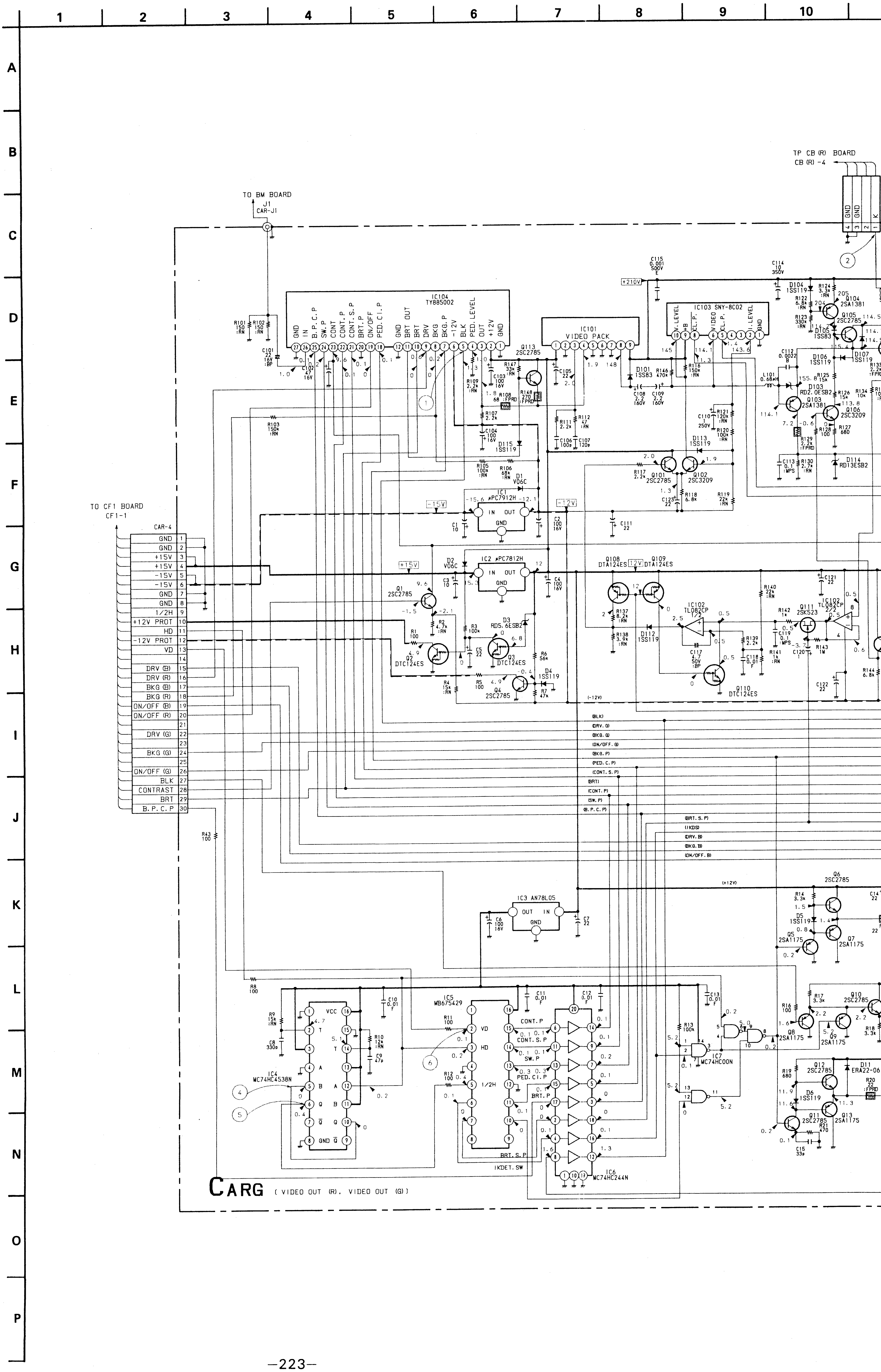


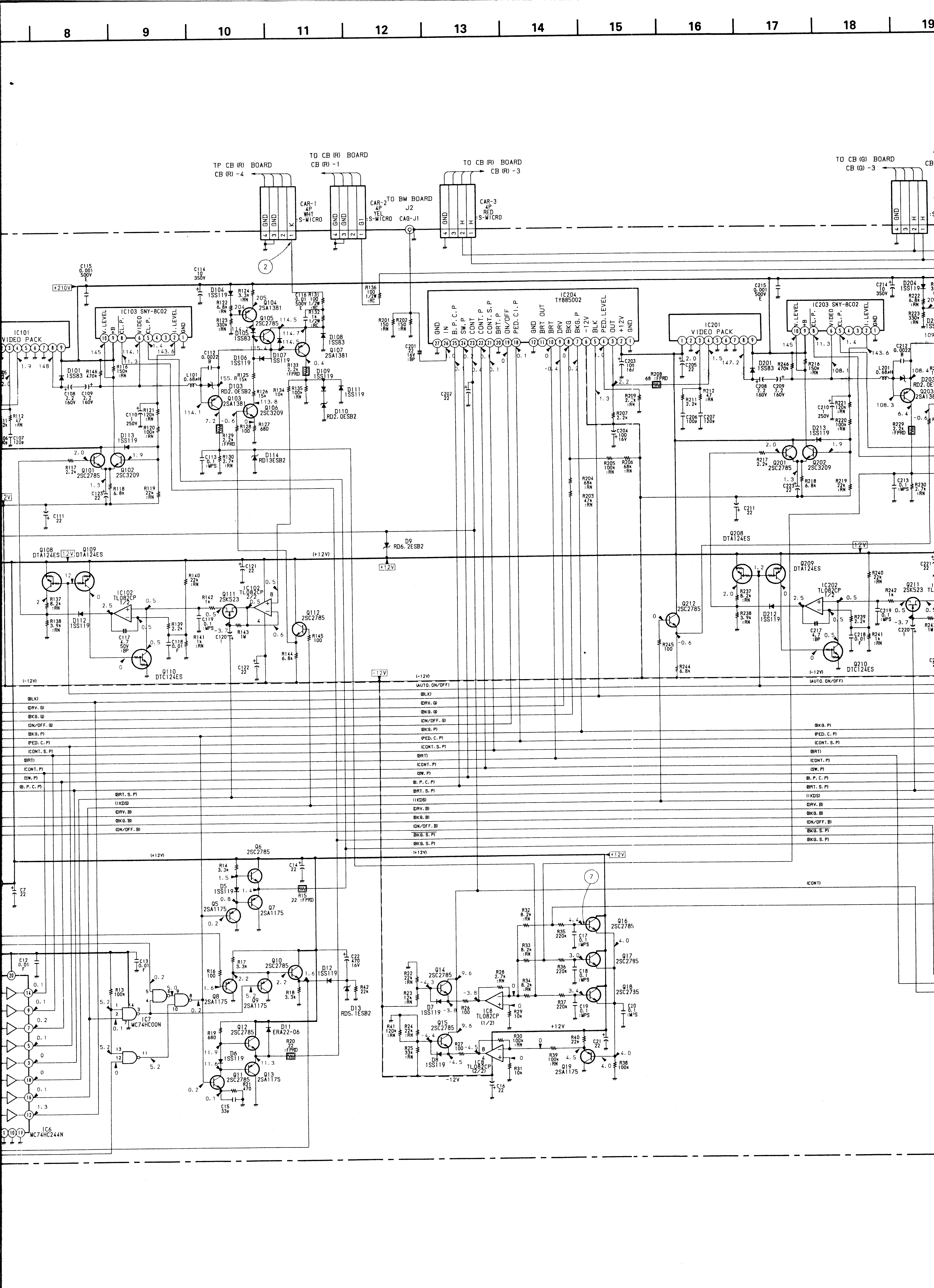
CA (RG) BOARD

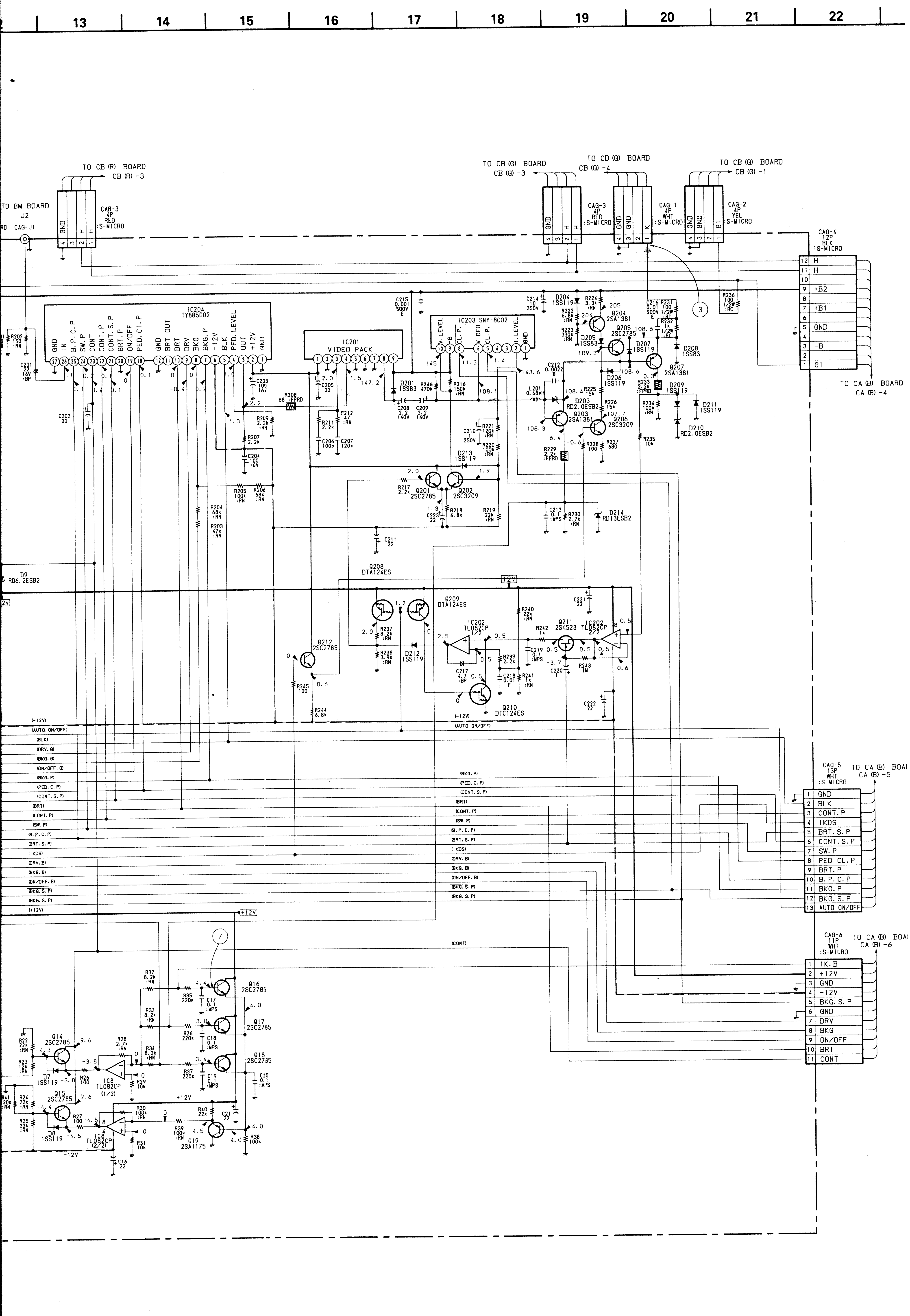
IC	
IC1	B – 7
IC2	B – 8
IC3	D – 13
IC4	E – 13
IC5	E – 12
IC6	E – 11
IC7	D – 12
IC8	A – 2
IC101	B – 11
IC102	A – 9
IC103	B – 12
IC104	D – 10
IC201	B – 5
IC202	A – 3
IC203	B – 7
IC204	D – 4

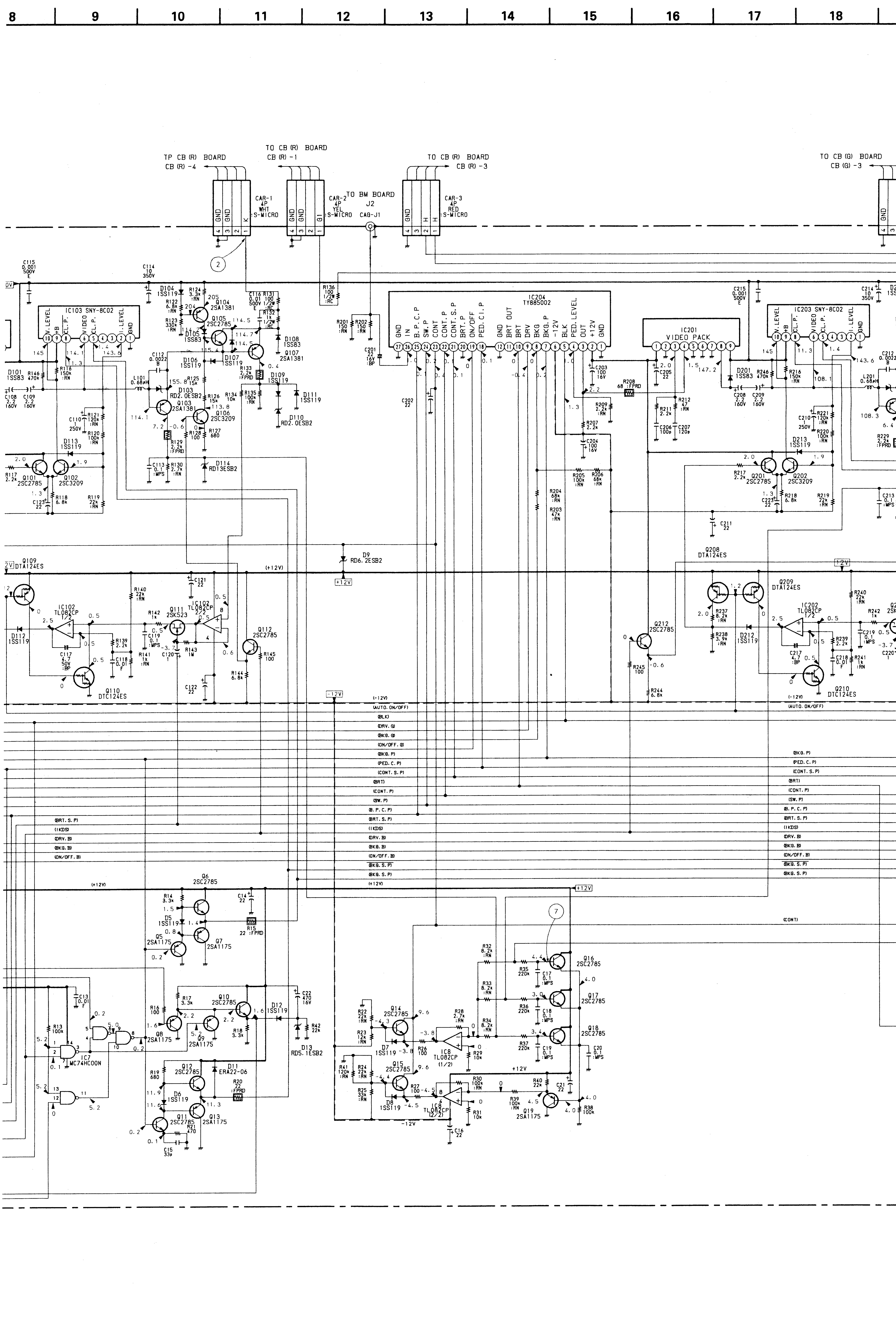
TRANSISTOR	
Q1	E – 3
Q2	B – 8
Q3	B – 8
Q4	C – 8
Q5	E – 8
Q6	E – 9
Q7	E – 8
Q8	E – 9
Q9	E – 9
Q10	E – 9
Q11	E – 8
Q12	E – 7
Q13	E – 8
Q14	B – 2
Q15	A – 2
Q16	C – 1
Q17	C – 1
Q18	C – 1
Q19	C – 1
Q101	B – 10
Q102	B – 11
Q103	A – 12
Q104	B – 13
Q105	A – 13
Q106	A – 11
Q107	A – 12
Q108	A – 10
Q109	A – 10
Q110	B – 10
Q111	A – 9
Q112	B – 9
Q113	C – 12
Q201	B – 5
Q202	B – 5
Q203	A – 6
Q204	A – 7
Q205	A – 6
Q206	A – 5
Q207	A – 6
Q208	A – 4
Q209	A – 4
Q210	B – 3
Q211	A – 3
Q212	B – 4

DIODE	
D1	C – 7
D2	B – 8
D3	B – 9
D4	A – 8
D5	E – 8
D6	E – 7
D7	B – 2
D8	B – 1
D9	E – 2
D11	E – 7
D12	E – 10
D13	E – 9
D101	B – 12
D103	A – 12
D104	B – 13
D105	B – 13
D106	A – 13
D107	A – 13
D108	A – 13
D109	A – 12
D110	A – 12
D111	A – 12
D112	A – 10
D113	B – 11
D114	A – 11
D115	C – 11
D201	B – 6
D203	A – 6
D204	A – 7
D205	A – 7
D206	A – 7
D207	A – 6
D208	A – 6
D209	A – 5
D210	A – 5
D211	A – 6
D212	A – 4
D213	B – 5
D214	A – 5

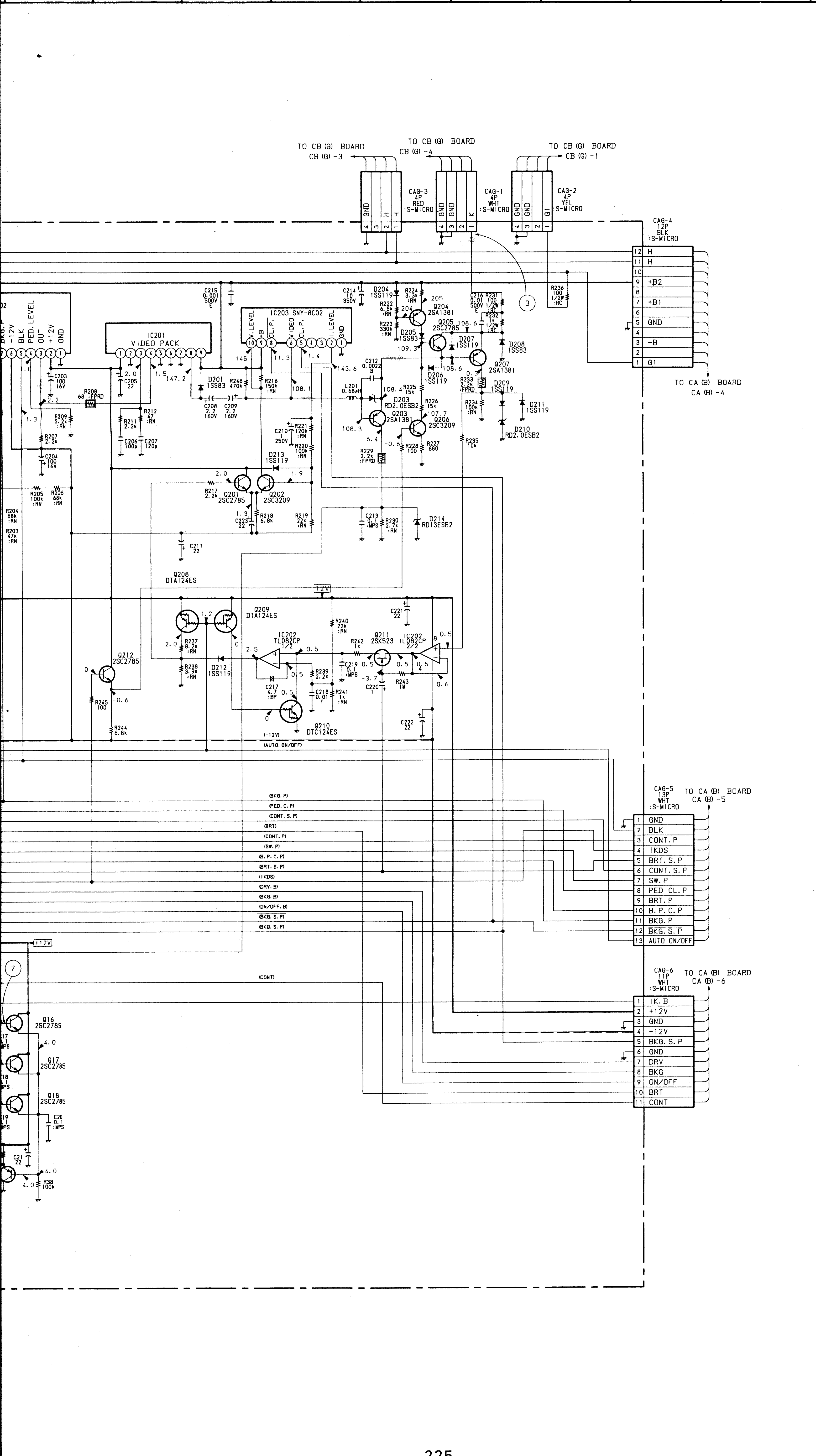

TO BM BOARD
TO CF1 BOARD
TP CB (R) BOARD
CARG (VIDEO OUT (R), VIDEO OUT (G))



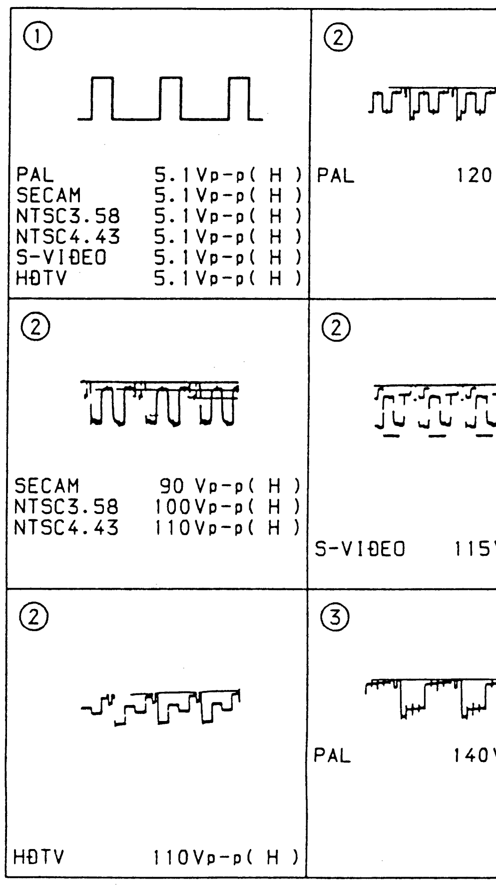



8 9 10 11 12 13 14 15 16 17 18
TP CB (R) BOARD CB (R) -4
TO CB (R) BOARD CB (R) -1
TO BM BOARD J2
TO CB (R) BOARD CB (R) -3
TO CB (G) BOARD CB (G) -3
CAR-1 4P WHT S-MICRO
CAR-2 4P YEL S-MICRO
CAG-J1
CAR-3 4P RED S-MICRO
IC103 SNY-8C02
IC204 TY885002
IC201 VIDEO PACK
IC203 SNY-8C02
IC102 TL082CP
IC202 TL082CP
IC7 MC74HC00N
IC8 TL082CP
D9 RD6.2ESB2
(AUTO. ON/OFF)
(+12V)
(-12V)
(CONT)

15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26

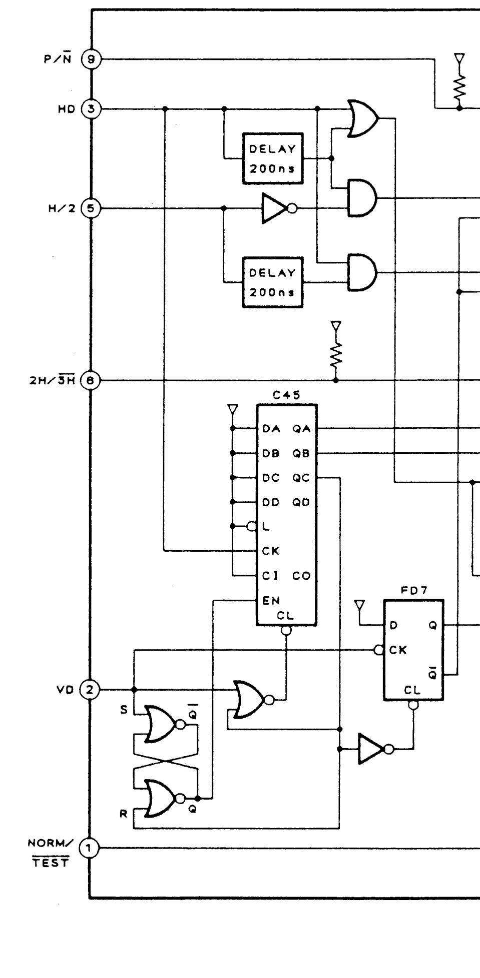


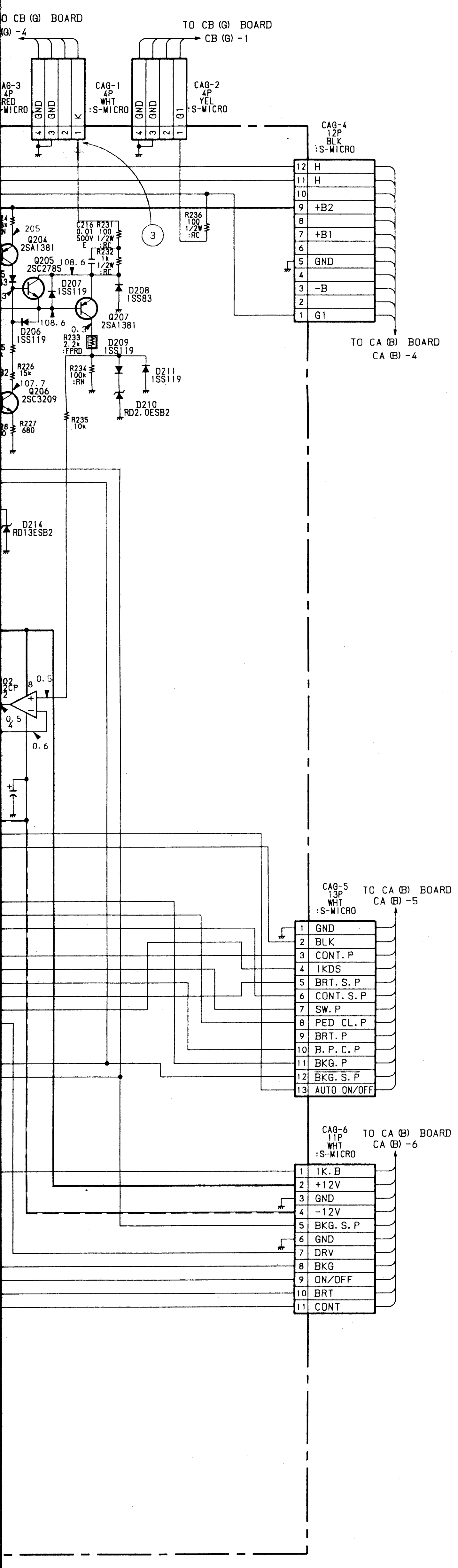
CA(RG) BOARD WAVEFORMS



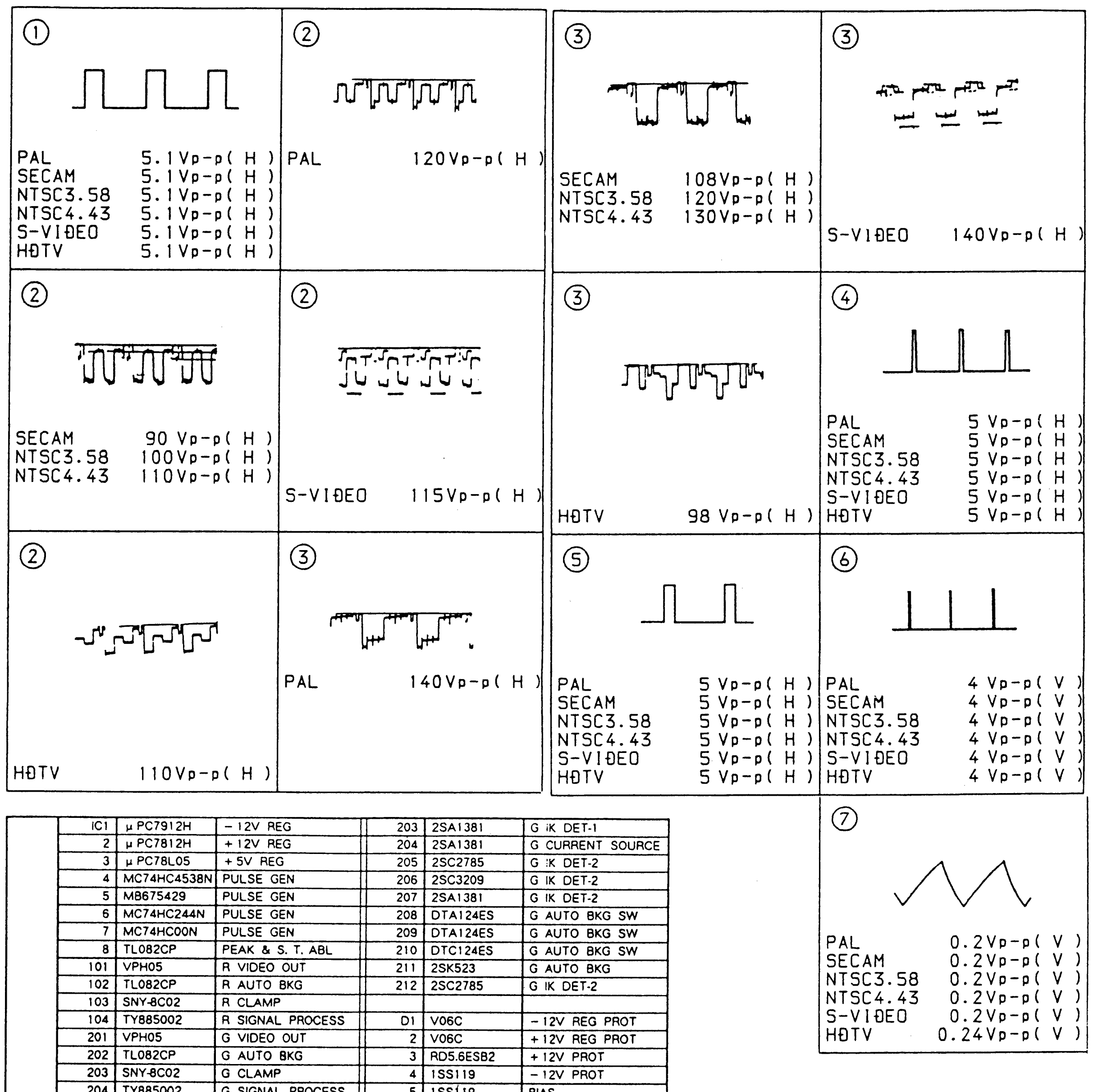
CA (RG)	IC1	μPC7912H	−12V REG	203	2S
	2	μPC7812H	+12V REG	204	2S
	3	μPC78L05	+5V REG	205	2S
	4	MC74HC4538N	PULSE GEN	206	2S
	5	MB675429	PULSE GEN	207	2S
	6	MC74HC244N	PULSE GEN	208	DT
	7	MC74HC00N	PULSE GEN	209	DT
	8	TL082CP	PEAK & S. T. ABL	210	DT
	101	VPH05	R VIDEO OUT	211	2S
	102	TL082CP	R AUTO BKG	212	2S
	103	SNY-8C02	R CLAMP		
	104	TY885002	R SIGNAL PROCESS	D1	VO
	201	VPH05	G VIDEO OUT	2	VO
	202	TL082CP	G AUTO BKG	3	RD
	203	SNY-8C02	G CLAMP	4	1S
	204	TY885002	G SIGNAL PROCESS	5	1S
				6	1S
	Q1	2SC2785	CONTRAST CONTROL	7	1S
	2	DTC124ES	+12V PROT	8	1S
	3	DTC124ES	+12V PROT	9	RD
	4	2SC2785	−12V PROT	11	ER
	5	2SA1175	BKG S.P. GEN	12	1S
	6	2SC2785	BKG S.P. GEN	13	RD
	7	2SA1175	BKG S.P. GEN	101	1S
	8	2SA1175	BLK P. GEN	103	RD
	9	2SA1175	BLK P. GEN	104	1S
	10	2SC2785	BLK P. GEN	105	1S
	11	2SC2785	BKG S.P. GEN	106	1S
	12	2SC2785	BKG S.P. GEN	107	1S
	13	2SA1175	BKG S.P. GEN	108	1S
	14	2SC2785	PEAK ABL	109	1S
	15	2SC2785	S.T. ABL	110	RD
	16	2SC2785	B.S.T. ABL	111	1S
	17	2SC2785	G.S.T. ABL	112	1S
	18	2SC2785	R.S.T. ABL	113	1S
	19	2SA1175	S.T. ABL	114	RD
	101	2SC2785	R CLAMP	115	1S
	102	2SC3209	R CLAMP	201	1S
	103	2SA1381	R IK DET-1	203	RD
	104	2SA1381	R CURRENT SOURCE	204	1S
	105	2SC2785	R IK DET-2	205	1S
	106	2SC3209	R IK DET-2	206	1S
	107	2SA1381	R IK DET-2	207	1S
	108	DTA124ES	R AUTO BKG SW	208	1S
	109	DTA124ES	R AUTO BKG SW	209	1S
	110	DTC124ES	R AUTO BKG SW	210	RD
	111	2SK523	R AUTO BKG	211	1S
	112	2SC2785	R IK DET-2	212	1S
	113	2SC2785	R γ CORR	213	1S
	201	2SC2785	G CLAMP	214	RD
	202	2SC3209	G CLAMP		

CA(RG) BOARD IC5 MB675429



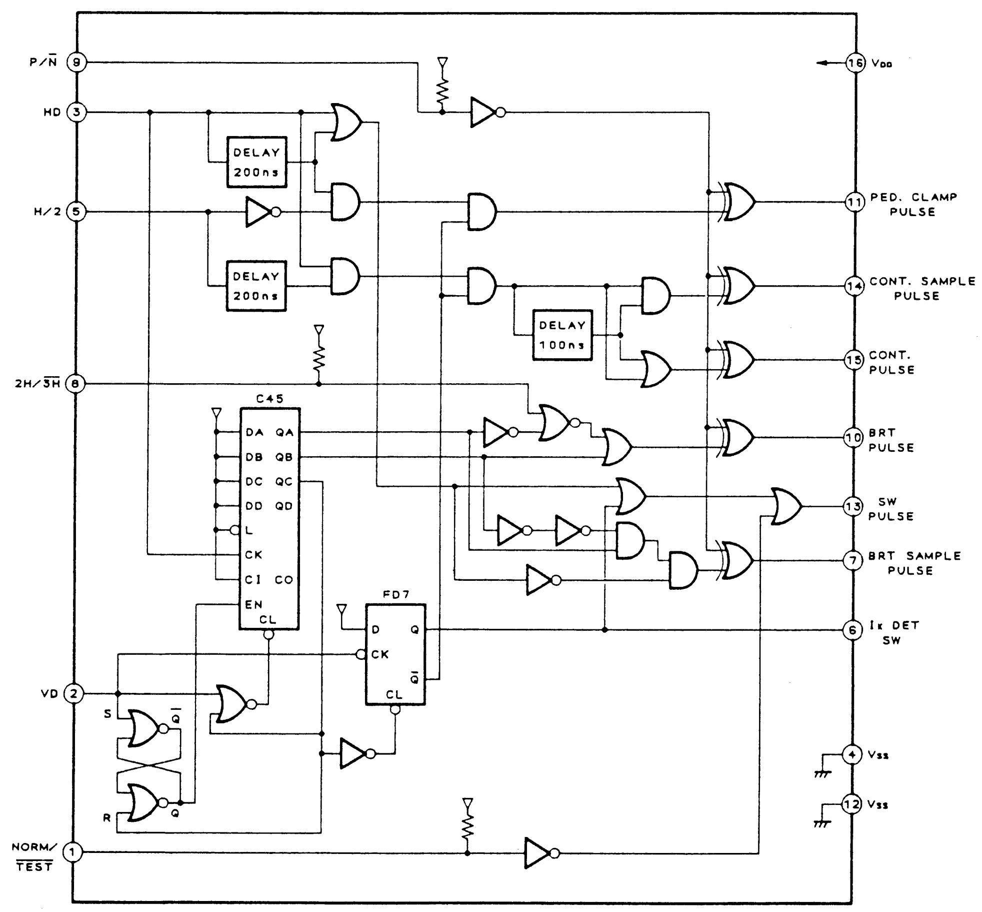


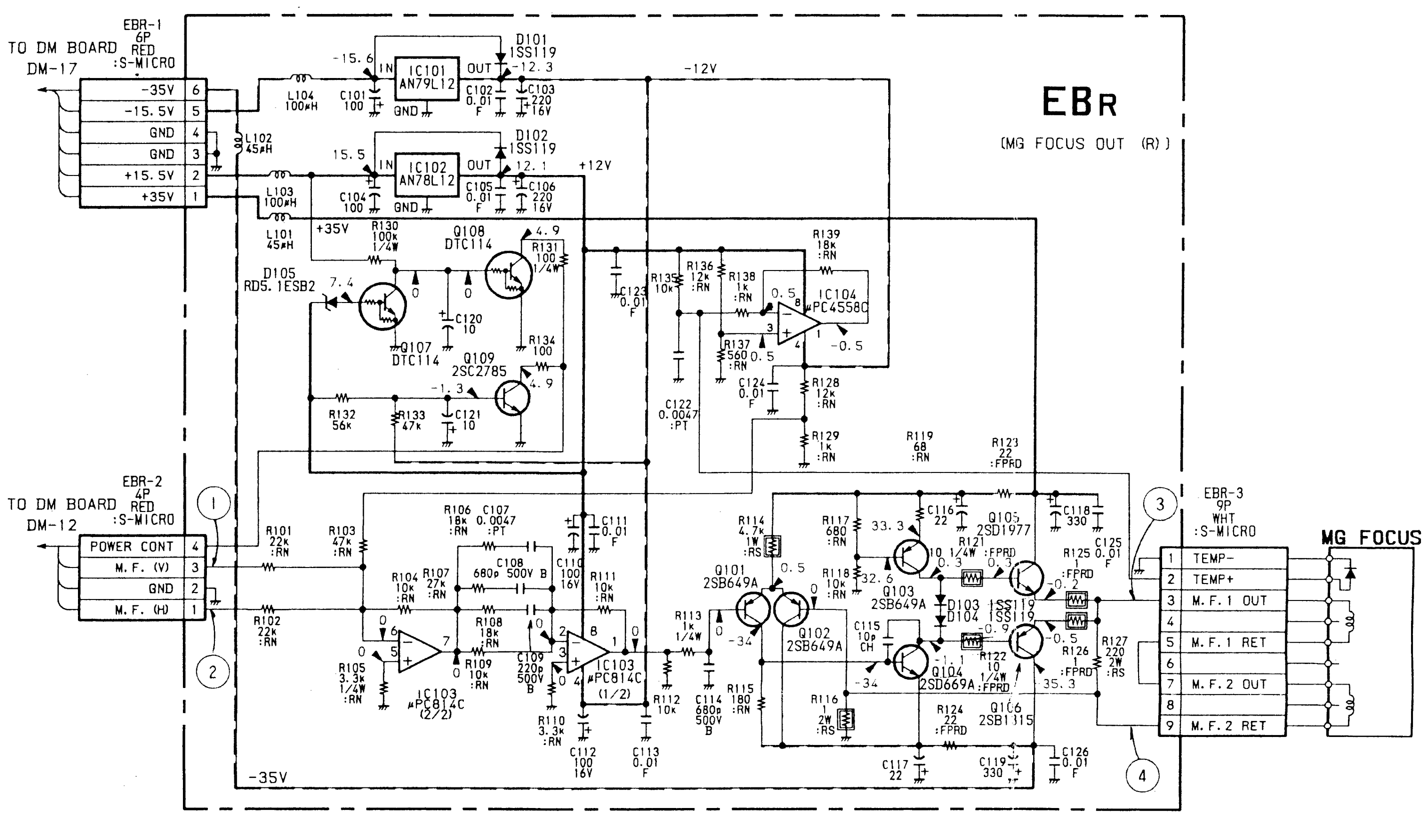
CA(RG) BOARD WAVEFORMS



Board	Ref.	Part	Function	Ref.	Part	Function
CA (RG)	IC1	μPC7912H	−12V REG	203	2SA1381	G IK DET-1
	2	μPC7812H	+12V REG	204	2SA1381	G CURRENT SOURCE
	3	μPC78L05	+5V REG	205	2SC2785	G IK DET-2
	4	MC74HC4538N	PULSE GEN	206	2SC3209	G IK DET-2
	5	MB675429	PULSE GEN	207	2SA1381	G IK DET-2
	6	MC74HC244N	PULSE GEN	208	DTA124ES	G AUTO BKG SW
	7	MC74HC00N	PULSE GEN	209	DTA124ES	G AUTO BKG SW
	8	TL082CP	PEAK & S. T. ABL	210	DTC124ES	G AUTO BKG SW
	101	VPH05	R VIDEO OUT	211	2SK523	G AUTO BKG
	102	TL082CP	R AUTO BKG	212	2SC2785	G IK DET-2
	103	SNY-8C02	R CLAMP			
	104	TY885002	R SIGNAL PROCESS	D1	V06C	−12V REG PROT
	201	VPH05	G VIDEO OUT	2	V06C	+12V REG PROT
	202	TL082CP	G AUTO BKG	3	RD5.6ESB2	+12V PROT
	203	SNY-8C02	G CLAMP	4	1SS119	−12V PROT
	204	TY885002	G SIGNAL PROCESS	5	1SS119	BIAS
				6	1SS119	BIAS
	Q1	2SC2785	CONTRAST CONTROL	7	1SS119	PEAK ABL
	2	DTC124ES	+12V PROT	8	1SS119	S.T. ABL
	3	DTC124ES	+12V PROT	9	RD6.2ESB2	CONT PROT
	4	2SC2785	−12V PROT	11	ERA22-06	PROT
	5	2SA1175	BKG S.P. GEN	12	1SS119	ON SPOT PROT
	6	2SC2785	BKG S.P. GEN	13	RD5.1ESB2	ON SPOT PROT
	7	2SA1175	BKG S.P. GEN	101	1SS83	R VIDEO OUT PROT
	8	2SA1175	BLK P. GEN	103	RD2.0ESB2	R IK DET-1 PROT
	9	2SA1175	BLK P. GEN	104	1SS119	R THERM COMP
	10	2SC2785	BLK P. GEN	105	1SS83	R IK DET-2 PROT
	11	2SC2785	BKG S.P. GEN	106	1SS119	R IK DET-2 PROT
	12	2SC2785	BKG S.P. GEN	107	1SS119	R IK DET-2 PROT
	13	2SA1175	BKG S.P. GEN	108	1SS83	R VIDEO OUT PROT
	14	2SC2785	PEAK ABL	109	1SS119	R IK DET-2 PROT
	15	2SC2785	S.T. ABL	110	RD2.0ESB2	R IK DET-2 PROT
	16	2SC2785	B.S.T. ABL	111	1SS119	R IK DET-2 PROT
	17	2SC2785	G.S.T. ABL	112	1SS119	R AUTO BKG SW
	18	2SC2785	R.S.T. ABL	113	1SS119	R OFF SPOT PROT
	19	2SA1175	S.T. ABL	114	RD13ESB2	R IK DET-1 PROT
	101	2SC2785	R CLAMP	115	1SS119	R γ CORR
	102	2SC3209	R CLAMP	201	1SS83	G VIDEO OUT PROT
	103	2SA1381	R IK DET-1	203	RD2.0ESB2	G IK DET-1 PROT
	104	2SA1381	R CURRENT SOURCE	204	1SS119	G THERM COMP
	105	2SC2785	R IK DET-2	205	1SS83	G IK DET-2 PROT
	106	2SC3209	R IK DET-2	206	1SS119	G IK DET-2 PROT
	107	2SA1381	R IK DET-2	207	1SS119	G IK DET-2 PROT
	108	DTA124ES	R AUTO BKG SW	208	1SS83	G VIDEO OUT PROT
	109	DTA124ES	R AUTO BKG SW	209	1SS119	G IK DET-2T PROT
	110	DTC124ES	R AUTO BKG SW	210	RD2.0ESB2	G IK DET-2T PROT
	111	2SK523	R AUTO BKG	211	1SS119	G IK DET-2T PROT
	112	2SC2785	R IK DET-2	212	1SS119	G AUTO BKG SW
	113	2SC2785	R γ CORR	213	1SS119	G OFF SPOT PROT
	201	2SC2785	G CLAMP	214	RD13ESB2	G IK DET-1 PROT
	202	2SC3209	G CLAMP			

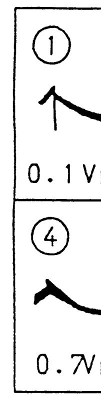
CA(RG) BOARD IC5 MB675429

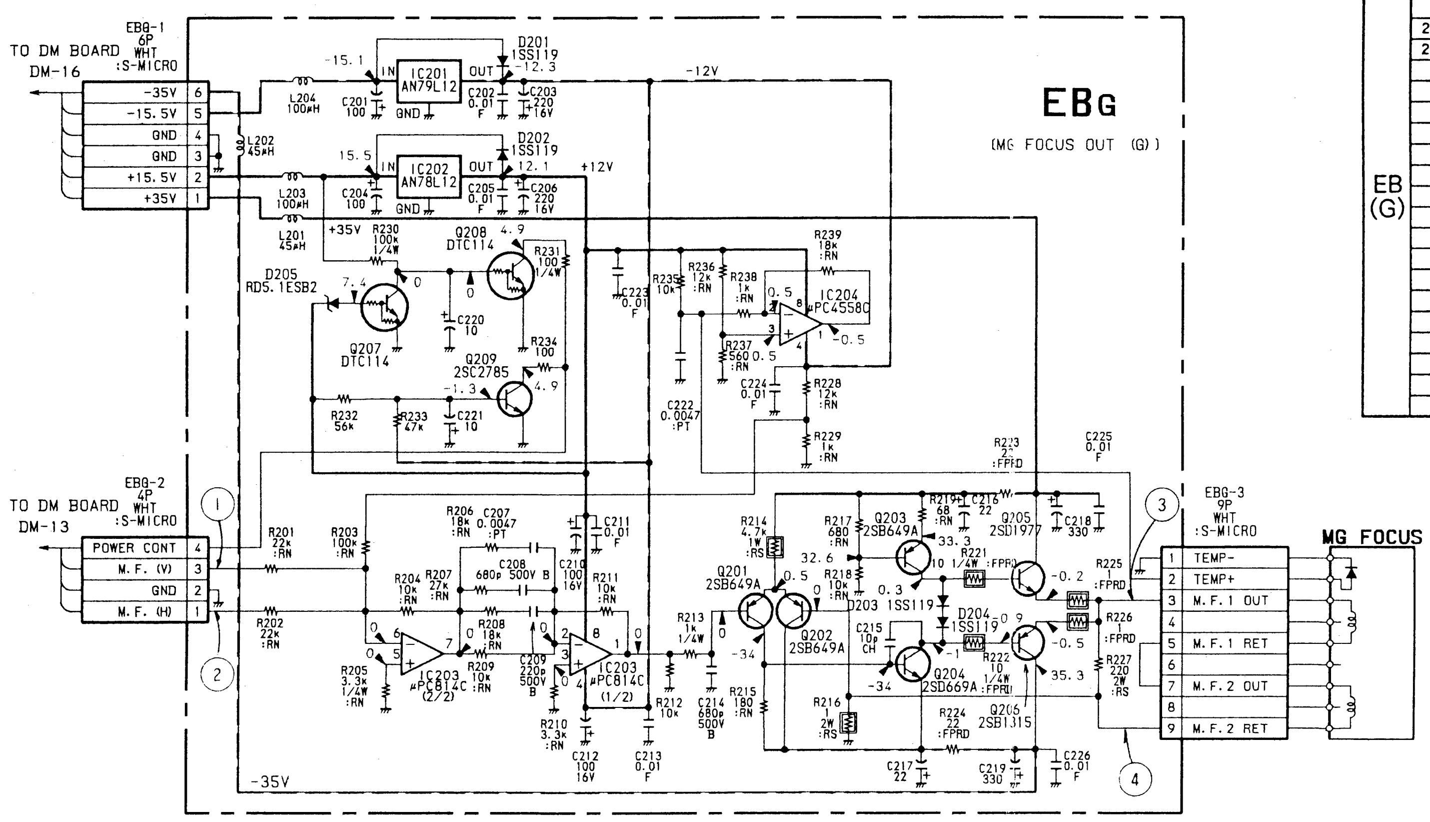




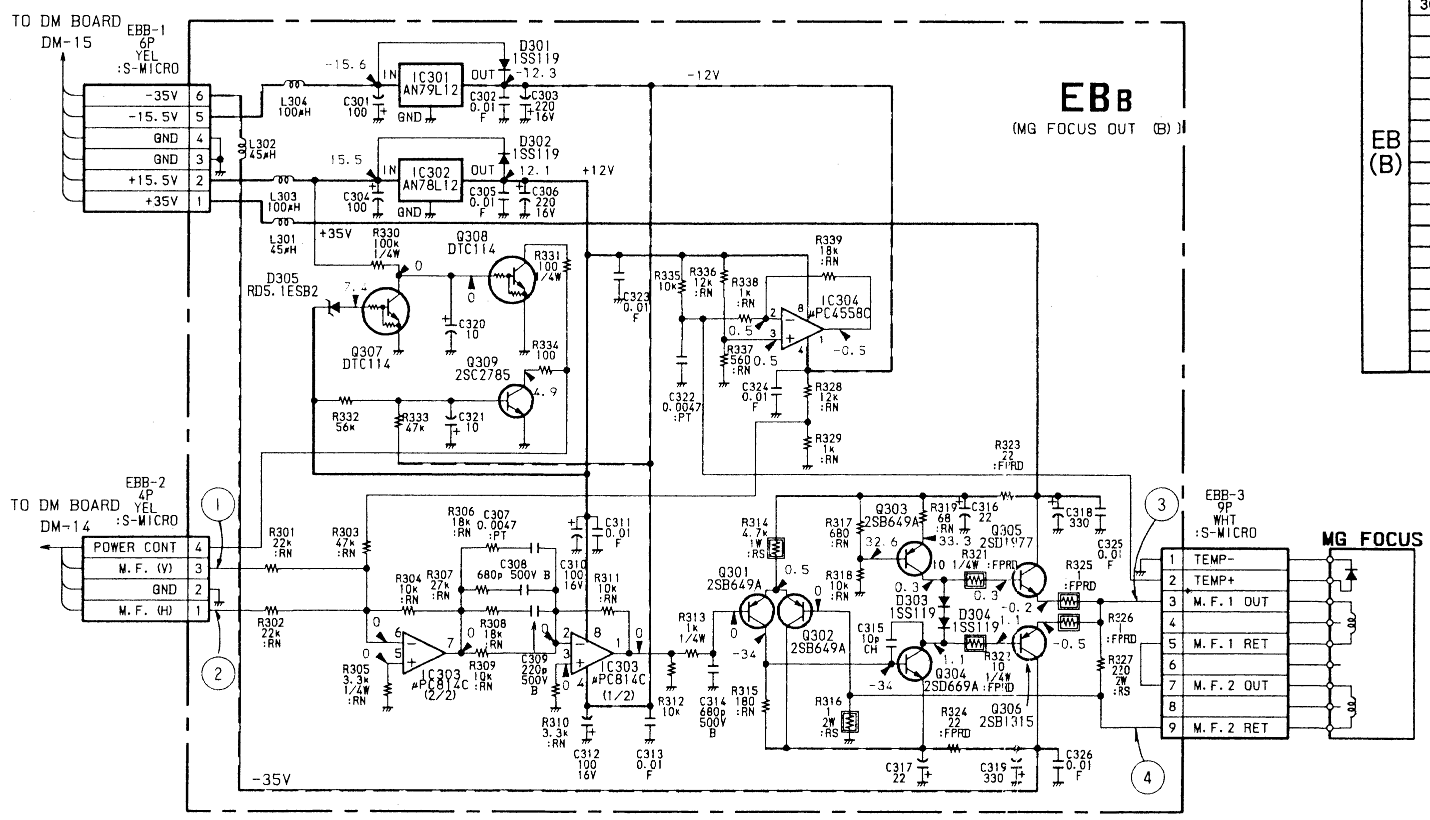
EB (R)	IC101	AN79L12
	102	AN78L12
	103 (1/2)	μ PC814C
	103 (2/2)	μ PC814C
	104	μ PC4558C
	Q101	2SB649A
	102	2SB649A
	103	2SB649A
	104	2SD669A
	105	2SD1977
	106	2SB1315
	107	DTC114ES
	108	DTC114ES
	109	2SC2785
	D101	1SS119
	102	1SS119
	103	1SS119
	104	1SS119
	105	RD5.1ESB2

EB BOA

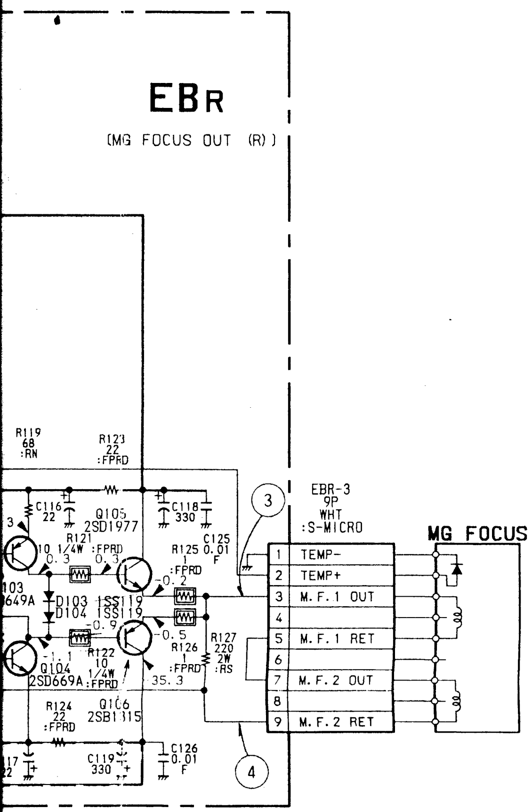




EB (G)	IC201	AN79L12B2	−12V R
	202	AN78L12B2	+12V R
	203 (1/2)	μ PC814C	FILTER
	203 (2/2)	μ PC814C	WAVE C
	204	μ PC4558C	TEMP C
	Q201	2SB649A	Mg FOC
	202	2SB649A	Mg FOC
	203	2SB649A	Mg FOC
	204	2SD669A	Mg FOC
	205	2SD1977	Mg FOC
	206	2SD1315	Mg FOC
	207	DTC114ES	PROTEC
	208	DTC114ES	PROTEC
	209	2SC2785	PROTEC
	D201	1SS119	PROTEC
	202	1SS119	PROTEC
	203	1SS119	BIAS
	204	1SS119	BIAS
	205	RD5.1ESB2	PROTEC

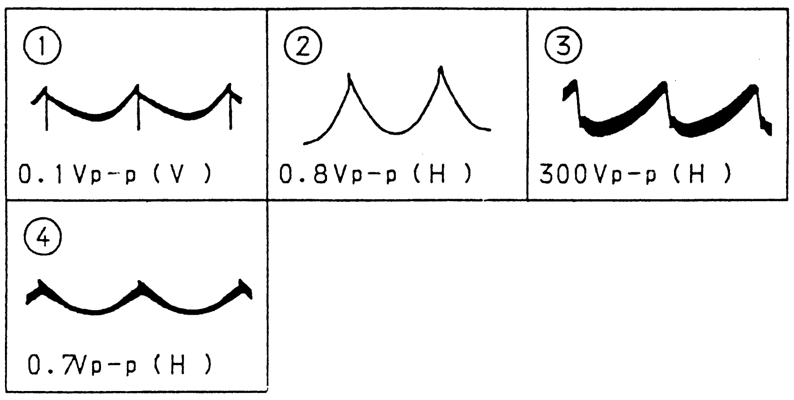


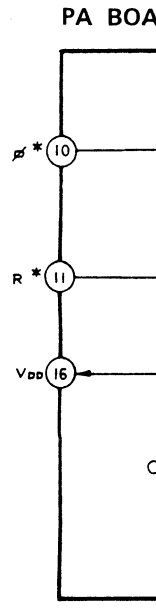
EB (B)	IC301	AN79L12	−12V R
	302	AN78L12	+12V R
	303 (1/2)	μ PC814C	FILTER
	303 (2/2)	μ PC814C	WAVE C
	304	μ PC4558C	TEMP C
	Q301	2SB649A	Mg FOC
	302	2SB649A	Mg FOC
	303	2SB649A	CONSTA
	304	2SD669A	Mg FOC
	305	2SD1977	Mg FOC
	306	2SB1315	Mg FOC
	307	DTC114ES	PROTEC
	308	DTC114ES	PROTEC
	309	2SC2785	PROTEC
	D301	1SS119	PROTEC
	302	1SS119	PROTEC
	303	1SS119	BIAS
	304	1SS119	BIAS
	305	RD5.1ESB2	PROTEC



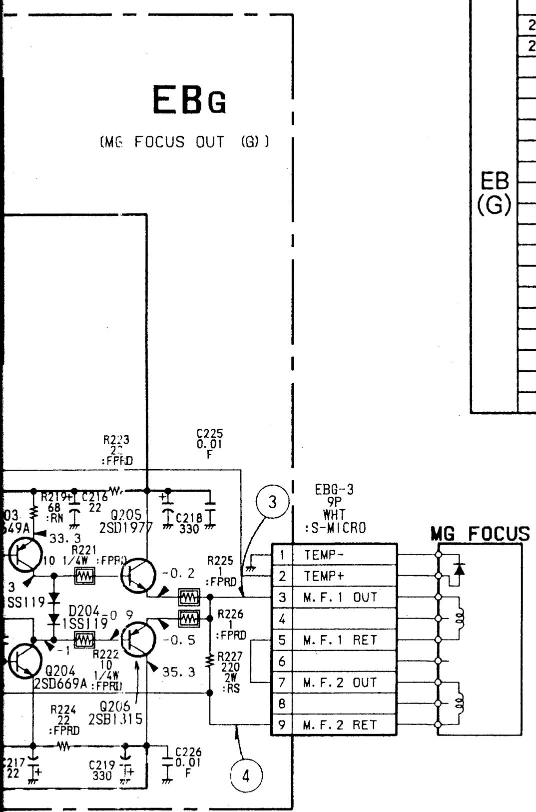
EB (R)	IC101	AN79L12	−12V REG
	102	AN78L12	+12V REG
	103 (1/2)	μ PC814C	FILTER
	103 (2/2)	μ PC814C	WAVE COMPSITION
	104	μ PC4558C	TEMP CORRECT
	Q101	2SB649A	Mg FOCUS PRE AMP
	102	2SB649A	Mg FOCUS PRE AMP
	103	2SB649A	CONSTANT CURRENT
	104	2SD669A	Mg FOCUS DRIVE
	105	2SD1977	Mg FOCUS OUT
	106	2SB1315	Mg FOCUS OUT
	107	DTC114ES	PROTECT
	108	DTC114ES	PROTECT
	109	2SC2785	PROTECT
	D101	1SS119	PROTECT
	102	1SS119	PROTECT
	103	1SS119	BIAS
	104	1SS119	BIAS
	105	RD5.1ESB2	PROTECT

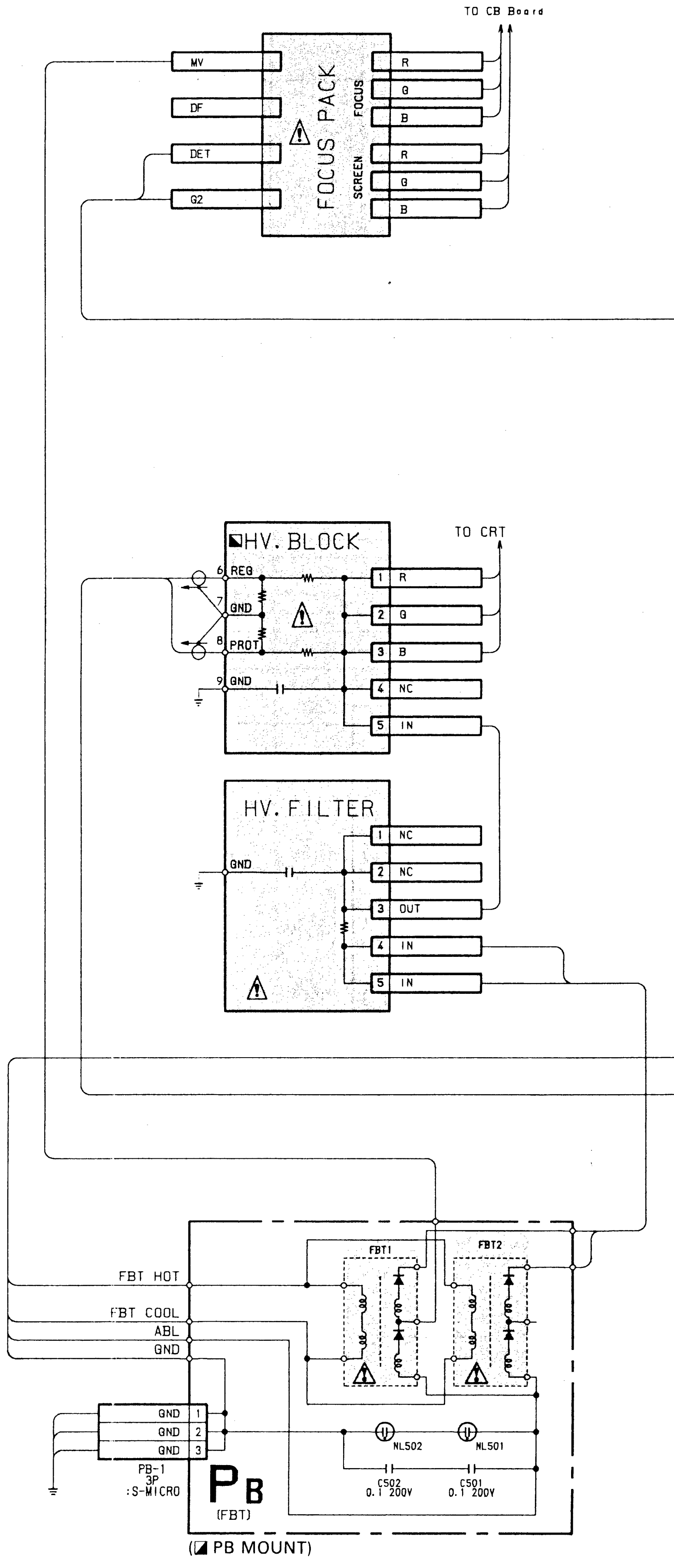
EB BOARD WAVEFORMS





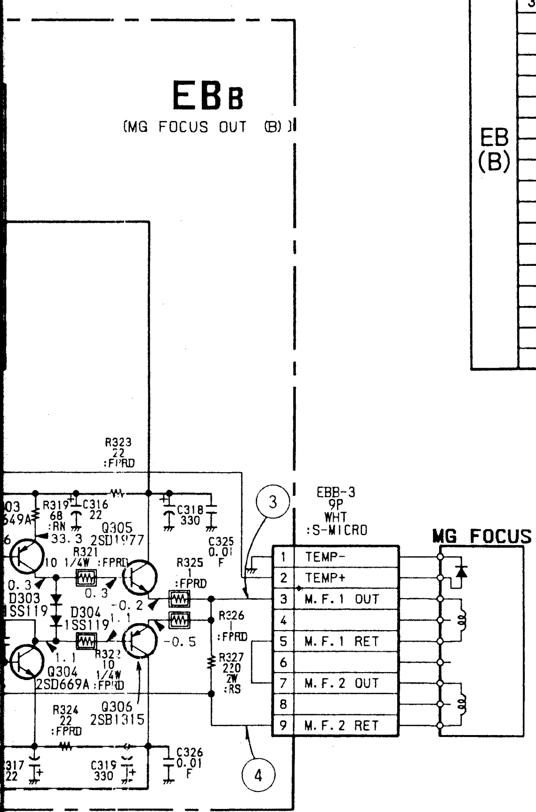
EB (G)	IC201	AN79L12B2	−12V REG
	202	AN78L12B2	+12V REG
	203 (1/2)	μ PC814C	FILTER
	203 (2/2)	μ PC814C	WAVE COMPSITION
	204	μ PC4558C	TEMP CORRECT
	Q201	2SB649A	Mg FOCUS PRE AMP
	202	2SB649A	Mg FOCUS PRE AMP
	203	2SB649A	Mg FOCUS PRE AMP
	204	2SD669A	Mg FOCUS DRIVE
	205	2SD1977	Mg FOCUS OUT
	206	2SD1315	Mg FOCUS OUT
	207	DTC114ES	PROTECT
	208	DTC114ES	PROTECT
	209	2SC2785	PROTECT
	D201	1SS119	PROTECT
	202	1SS119	PROTECT
	203	1SS119	BIAS
	204	1SS119	BIAS
	205	RD5.1ESB2	PROTECT



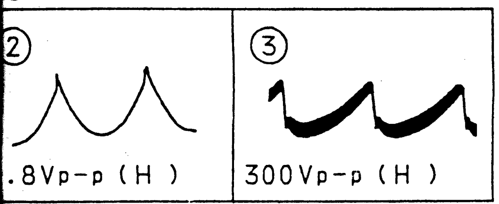


PA	IC1 (1/2)	μ PC4082C	HV REG DET
	1 (2/2)	μ PC4082C	LOW B PROT
	2 (1/2)	μ PC393C	HV PROT DET
	2 (2/2)	μ PC393C	HV PROT
	3 (1/2)	μ PC393C	REG UP PROT
	3 (2/2)	μ PC393C	Σ IK PROT
	4 (1/2)	μ PC393C	HV PROT BUFF
	4 (2/2)	μ PC393C	Σ IK PROT BUFF
	5	μ PC78M12H	+12V REG
	6	μ PC1394CH	HV REG CONTROL
	7	TC4040BP	OSC DEV-1
	8	MC14572UB	OSC DEV-2
	9	TL431CLP	HV REG REF
	Q1	2SC2785	Σ IK DET-1
	2	2SC2785	Σ IK DET-2
	3	2SA1175	OSC BUFF-1
	4	2SA1175	OSC BUFF-2
	5	2SC2688	HV REG DRIVE
	6	2SC2688	HV CONV DRIVE
	7	2SC2785	HV STOP SW-1
	8	2SC2785	HV STOP SW-2
	9	2SC2785	HV STOP SW-3
	10	2SD1548	HV CONV
	11	2SC2555	HV REG
	12	2SA1175	POWER ON RESET-1
	13	2SA1175	POWER OFF RESET
	14	2SC2785	POWER ON RESET-2
	15	2SC2785	POWER CONT
	16	2SC2785	STOP BUFF
	17	2SC2785	STOP INV
	18	2SC3675	G2 REG
	19	2SA1381	HV DRIVE CONT
	20	2SA1175	REG OSC BUFF
	D3	1SS119	Σ IK SW
	4	1SS119	Σ IK HOLD
	5	RD5.1ESB2	Σ IK ZENER
	6	1SS119	REG STOP SW-1
	7	1SS119	REG STOP SW-2
	8	1SS119	REG STOP SW-3
	9	1SS119	HV PROT HOLD
	10	RD5.1ESB2	LOW B PROT ZENER
	11	1SS119	REG STOP SW-4
	12	RD5.1ESB2	HV PROT ZENER
	13	1SS119	+12V HOLD
	14	RD10ESB2	REG PROT
	16	1SS119	OSC CLAMP
	18	1SS119	+12V REG PROT
	20	ERC06-15SA	DUMPER-1
	21	ERC06-15SA	DUMPER-2
	22	RU-1	SPEED UP-1
	23	ERD29-08J	HV REG CLAMP
	24	1SS119	STOP SW-1
	25	1SS119	STOP SW-2
	26	1SS119	REG STOP SW-5
	27	RD10ESB2	LEBEL SHIFT
	28	1SS119	STOP SW-3
	29	1SS119	STOP SW-4

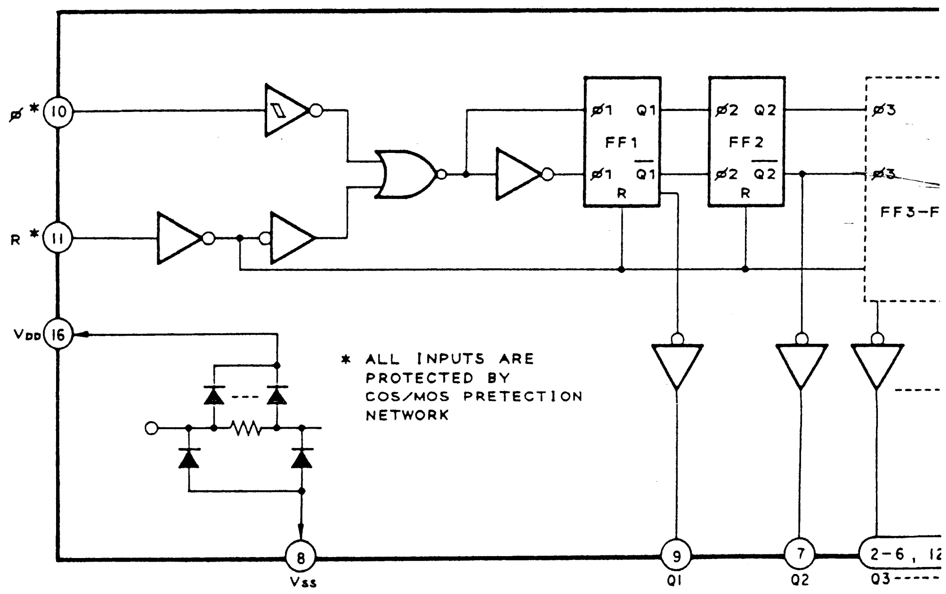
EB (B)	IC301	AN79L12	−12V REG
	302	AN78L12	+12V REG
	303 (1/2)	μ PC814C	FILTER
	303 (2/2)	μ PC814C	WAVE COMPSITION
	304	μ PC4558C	TEMP CORRECT
	Q301	2SB649A	Mg FOCUS PRE AMP
	302	2SB649A	Mg FOCUS PRE AMP
	303	2SB649A	CONSTANT CURRENT
	304	2SD669A	Mg FOCUS DRIVE
	305	2SD1977	Mg FOCUS OUT
	306	2SB1315	Mg FOCUS OUT
	307	DTC114ES	PROTECT
	308	DTC114ES	PROTECT
	309	2SC2785	PROTECT
	D301	1SS119	PROTECT
	302	1SS119	PROTECT
	303	1SS119	BIAS
	304	1SS119	BIAS
	305	RD5.1ESB2	PROTECT



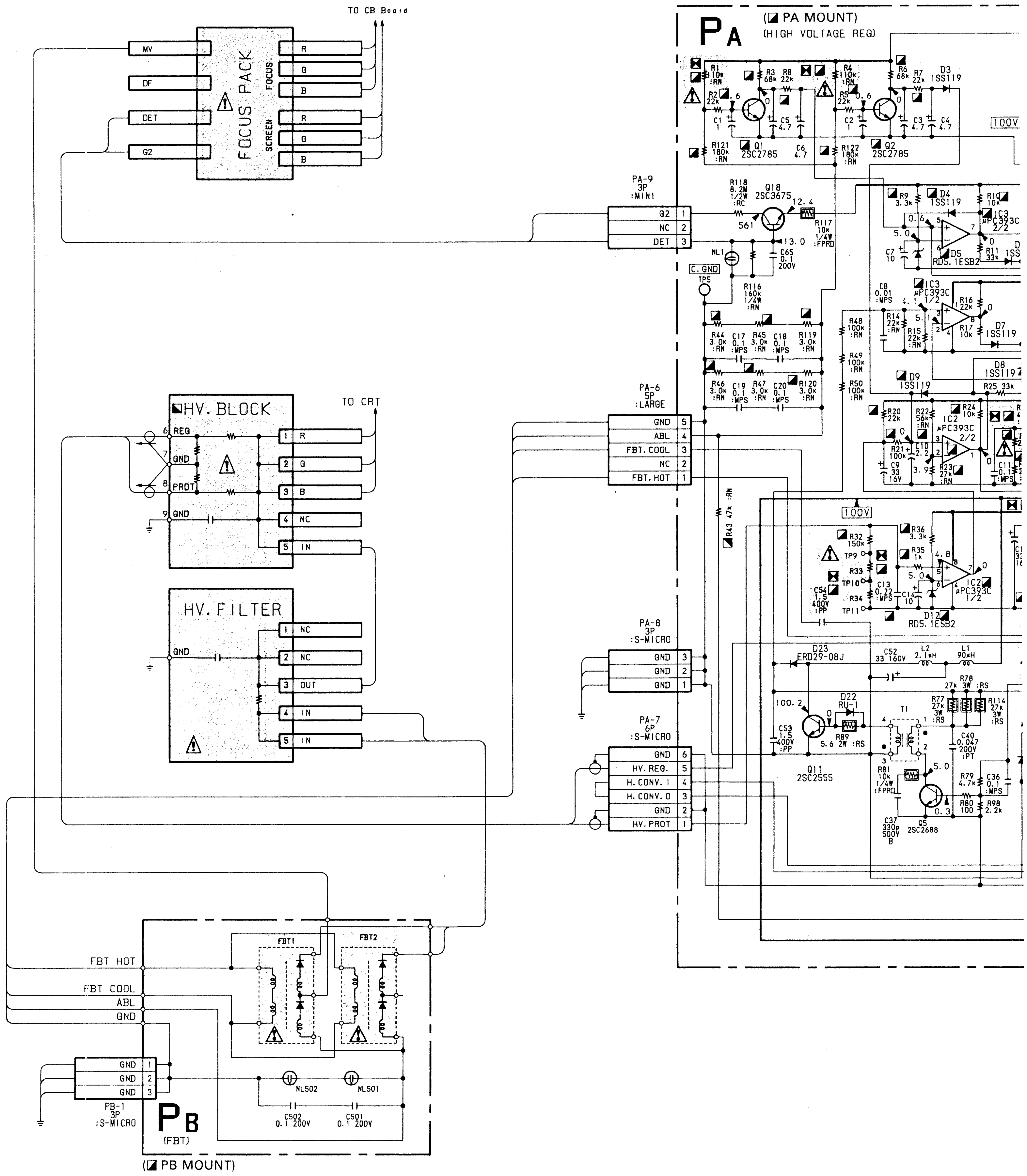
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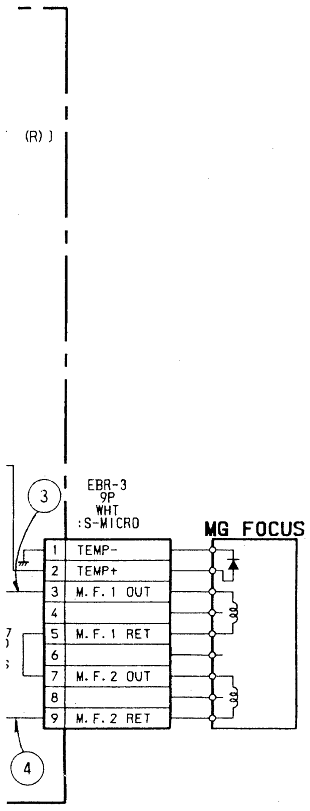


PA BOARD IC7 TC4040BP



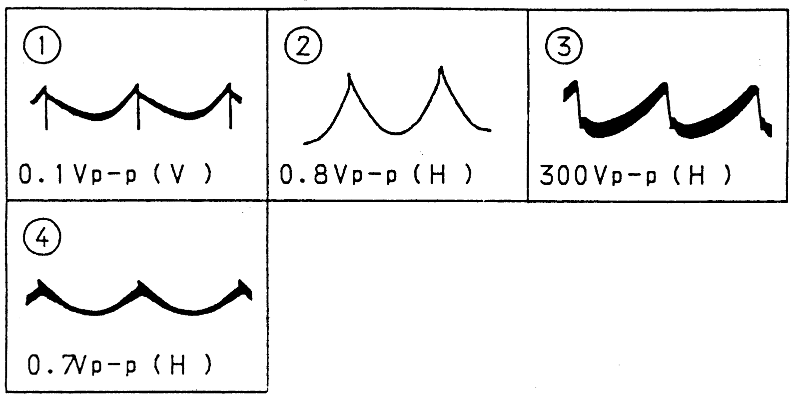
IC1 (1/2)	μ PC4082C	HV REG DET
1 (2/2)	μ PC4082C	LOW B PROT
2 (1/2)	μ PC393C	HV PROT DET
2 (2/2)	μ PC393C	HV PROT
3 (1/2)	μ PC393C	REG UP PROT
3 (2/2)	μ PC393C	Σ IK PROT
4 (1/2)	μ PC393C	HV PROT BUFF
4 (2/2)	μ PC393C	Σ IK PROT BUFF
5	μ PC78M12H	+ 12V REG
6	μ PC1394CH	HV REG CONTROL
7	TC4040BP	OSC DEV-1
8	MC14572UB	OSC DEV-2
9	TL431CLP	HV REG REF
Q1	2SC2785	Σ IK DET-1
2	2SC2785	Σ IK DET-2
3	2SA1175	OSC BUFF-1
4	2SA1175	OSC BUFF-2
5	2SC2688	HV REG DRIVE
6	2SC2688	HV CONV DRIVE
7	2SC2785	HV STOP SW-1
8	2SC2785	HV STOP SW-2
9	2SC2785	HV STOP SW-3
10	2SD1548	HV CONV
11	2SC2555	HV REG
12	2SA1175	POWER ON RESET-1
13	2SA1175	POWER OFF RESET
14	2SC2785	POWER ON RESET-2
15	2SC2785	POWER CONT
16	2SC2785	STOP BUFF
17	2SC2785	STOP INV
18	2SC3675	G2 REG
19	2SA1381	HV DRIVE CONT
20	2SA1175	REG OSC BUFF
D3	1SS119	Σ IK SW
4	1SS119	Σ IK HOLD
5	RD5.1ESB2	Σ IK ZENER
6	1SS119	REG STOP SW-1
7	1SS119	REG STOP SW-2
8	1SS119	REG STOP SW-3
9	1SS119	HV PROT HOLD
10	RD5.1ESB2	LOW B PROT ZENER
11	1SS119	REG STOP SW-4
12	RD5.1ESB2	HV PROT ZENER
13	1SS119	+ 12V HOLD
14	RD10ESB2	REG PROT
16	1SS119	OSC CLAMP
18	1SS119	+ 12V REG PROT
20	ERC06-15SA	DUMPER-1
21	ERC06-15SA	DUMPER-2
22	RU-1	SPEED UP-1
23	ERD29-08J	HV REG CLAMP
24	1SS119	STOP SW-1
25	1SS119	STOP SW-2
26	1SS119	REG STOP SW-5
27	RD10ESB2	LEBEL SHIFT
28	1SS119	STOP SW-3
29	1SS119	STOP SW-4



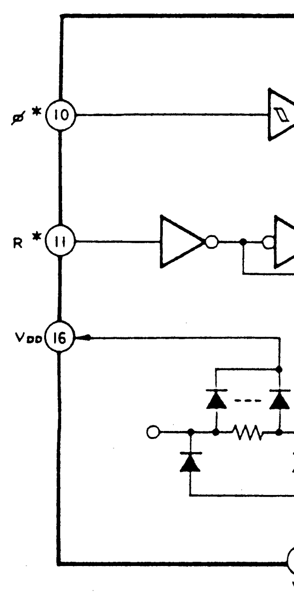


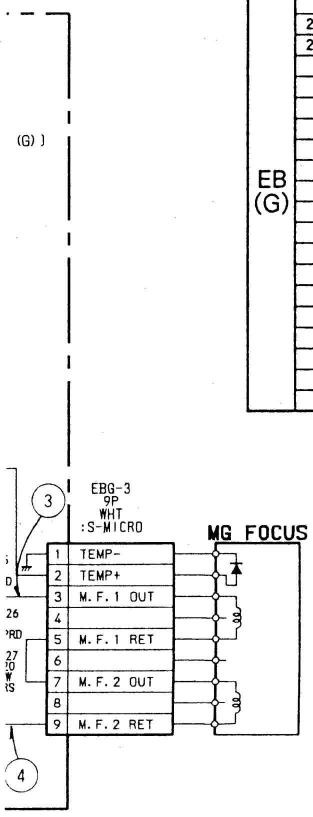
EB (R)	IC101	AN79L12	−12V REG
	102	AN78L12	+12V REG
	103 (1/2)	μ PC814C	FILTER
	103 (2/2)	μ PC814C	WAVE COMPSITION
	104	μ PC4558C	TEMP CORRECT
	Q101	2SB649A	Mg FOCUS PRE AMP
	102	2SB649A	Mg FOCUS PRE AMP
	103	2SB649A	CONSTANT CURRENT
	104	2SD669A	Mg FOCUS DRIVE
	105	2SD1977	Mg FOCUS OUT
	106	2SB1315	Mg FOCUS OUT
	107	DTC114ES	PROTECT
	108	DTC114ES	PROTECT
	109	2SC2785	PROTECT
	D101	1SS119	PROTECT
	102	1SS119	PROTECT
	103	1SS119	BIAS
	104	1SS119	BIAS
	105	RD5.1ESB2	PROTECT

EB BOARD WAVEFORMS



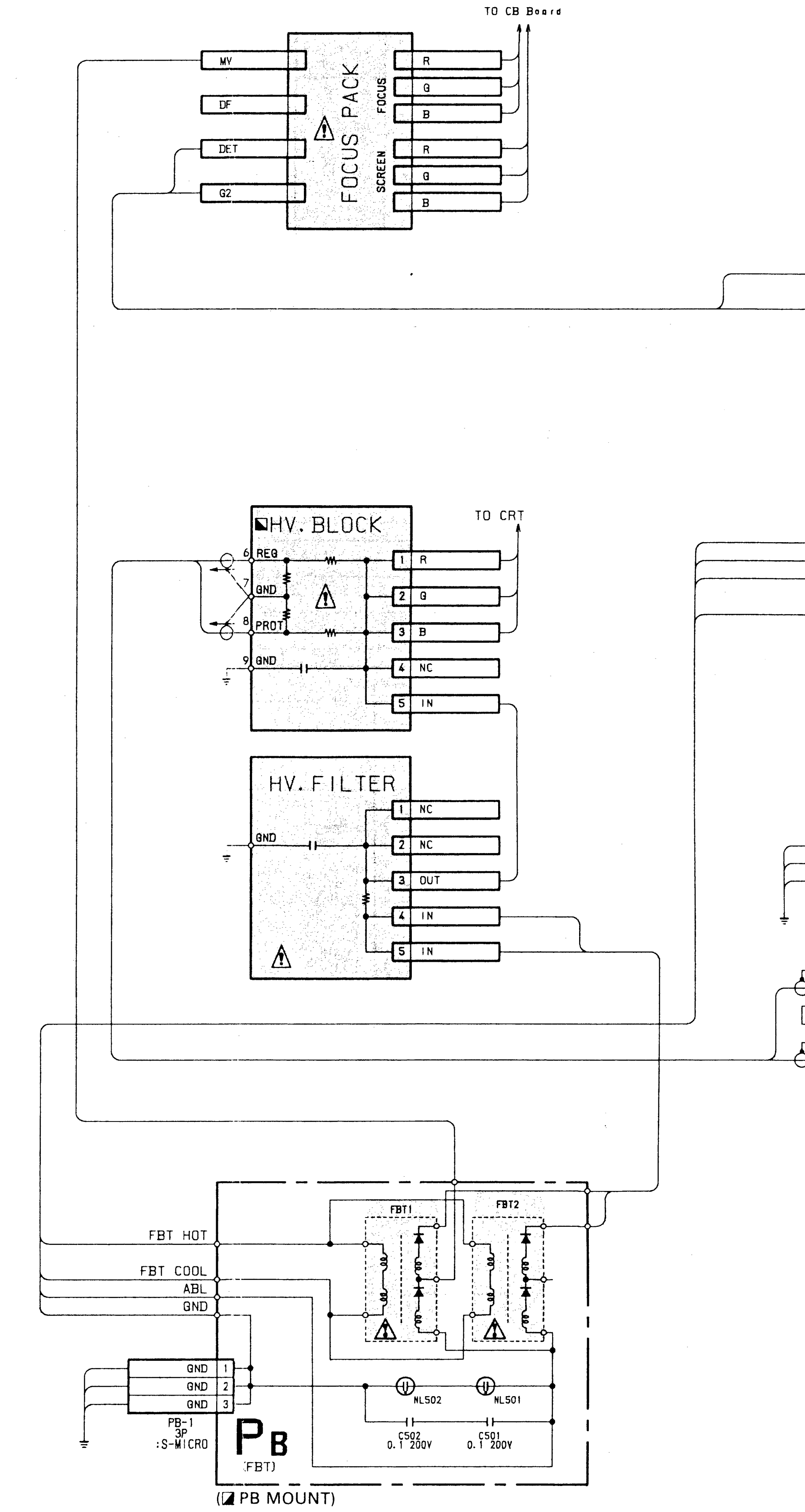
PA BOARD IC7 TC

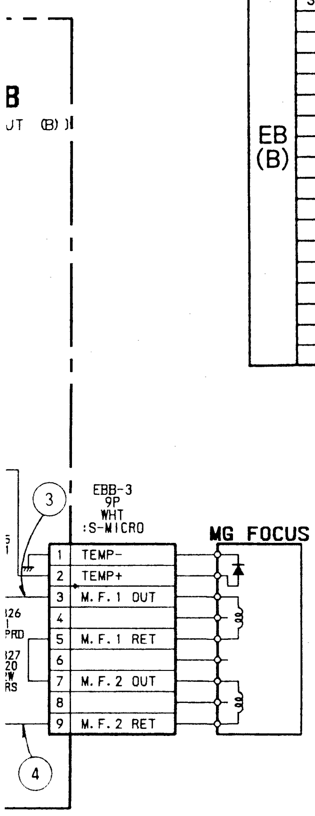




EB (G)	IC201	AN79L12B2	−12V REG
	202	AN78L12B2	+12V REG
	203 (1/2)	μ PC814C	FILTER
	203 (2/2)	μ PC814C	WAVE COMPSITION
	204	μ PC4558C	TEMP CORRECT
	Q201	2SB649A	Mg FOCUS PRE AMP
	202	2SB649A	Mg FOCUS PRE AMP
	203	2SB649A	Mg FOCUS PRE AMP
	204	2SD669A	Mg FOCUS DRIVE
	205	2SD1977	Mg FOCUS OUT
	206	2SD1315	Mg FOCUS OUT
	207	DTC114ES	PROTECT
	208	DTC114ES	PROTECT
	209	2SC2785	PROTECT
	D201	1SS119	PROTECT
	202	1SS119	PROTECT
	203	1SS119	BIAS
	204	1SS119	BIAS
	205	RD5.1ESB2	PROTECT

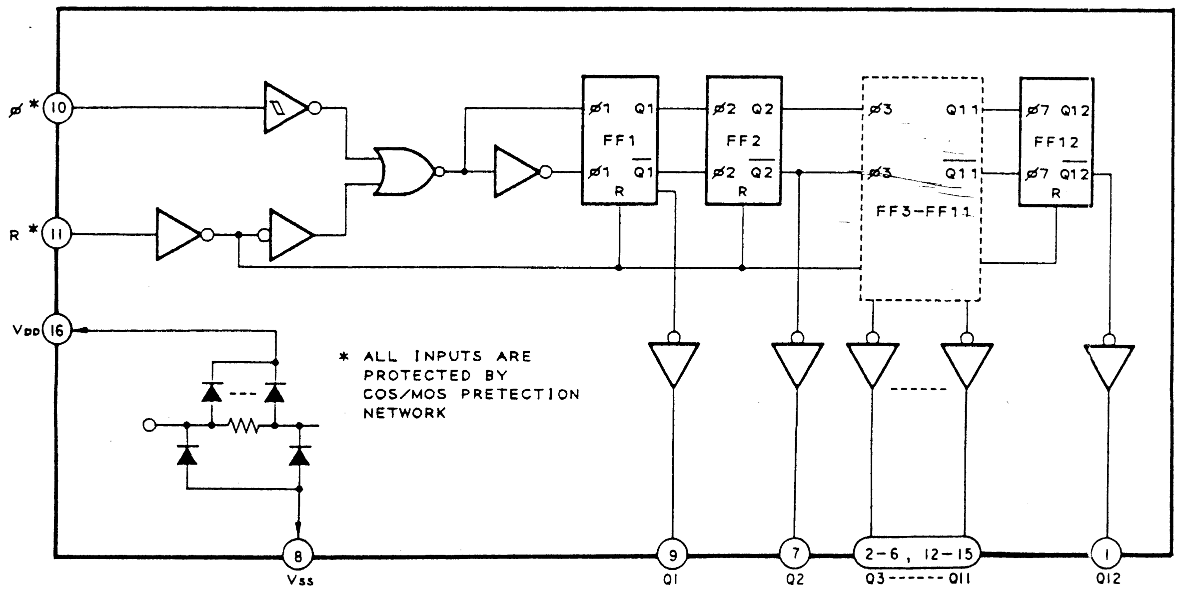
PA	IC1 (1/2)	μ PC4082C	HV REG DET
	1 (2/2)	μ PC4082C	LOW B PROT
	2 (1/2)	μ PC393C	HV PROT DET
	2 (2/2)	μ PC393C	HV PROT
	3 (1/2)	μ PC393C	REG UP PROT
	3 (2/2)	μ PC393C	Σ IK PROT
	4 (1/2)	μ PC393C	HV PROT BUFF
	4 (2/2)	μ PC393C	Σ IK PROT BUFF
	5	μ PC78M12H	+12V REG
	6	μ PC1394CH	HV REG CONTROL
	7	TC4040BP	OSC DEV-1
	8	MC14572UB	OSC DEV-2
	9	TL431CLP	HV REG REF
	Q1	2SC2785	Σ IK DET-1
	2	2SC2785	Σ IK DET-2
	3	2SA1175	OSC BUFF-1
	4	2SA1175	OSC BUFF-2
	5	2SC2688	HV REG DRIVE
	6	2SC2688	HV CONV DRIVE
	7	2SC2785	HV STOP SW-1
	8	2SC2785	HV STOP SW-2
	9	2SC2785	HV STOP SW-3
	10	2SD1548	HV CONV
	11	2SC2555	HV REG
	12	2SA1175	POWER ON RESET-1
	13	2SA1175	POWER OFF RESET
	14	2SC2785	POWER ON RESET-2
	15	2SC2785	POWER CONT
	16	2SC2785	STOP BUFF
	17	2SC2785	STOP INV
	18	2SC3675	G2 REG
	19	2SA1381	HV DRIVE CONT
	20	2SA1175	REG OSC BUFF
	D3	1SS119	Σ IK SW
	4	1SS119	Σ IK HOLD
	5	RD5.1ESB2	Σ IK ZENER
	6	1SS119	REG STOP SW-1
	7	1SS119	REG STOP SW-2
	8	1SS119	REG STOP SW-3
	9	1SS119	HV PROT HOLD
	10	RD5.1ESB2	LOW B PROT ZENER
	11	1SS119	REG STOP SW-4
	12	RD5.1ESB2	HV PROT ZENER
	13	1SS119	+12V HOLD
	14	RD10ESB2	REG PROT
	16	1SS119	OSC CLAMP
	18	1SS119	+12V REG PROT
	20	ERC06-15SA	DUMPER-1
	21	ERC06-15SA	DUMPER-2
	22	RU-1	SPEED UP-1
	23	ERD29-08J	HV REG CLAMP
	24	1SS119	STOP SW-1
	25	1SS119	STOP SW-2
	26	1SS119	REG STOP SW-5
	27	RD10ESB2	LEBEL SHIFT
	28	1SS119	STOP SW-3
	29	1SS119	STOP SW-4



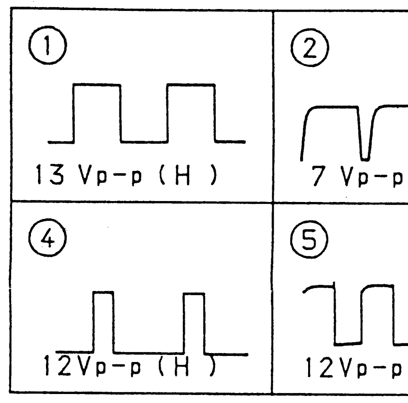


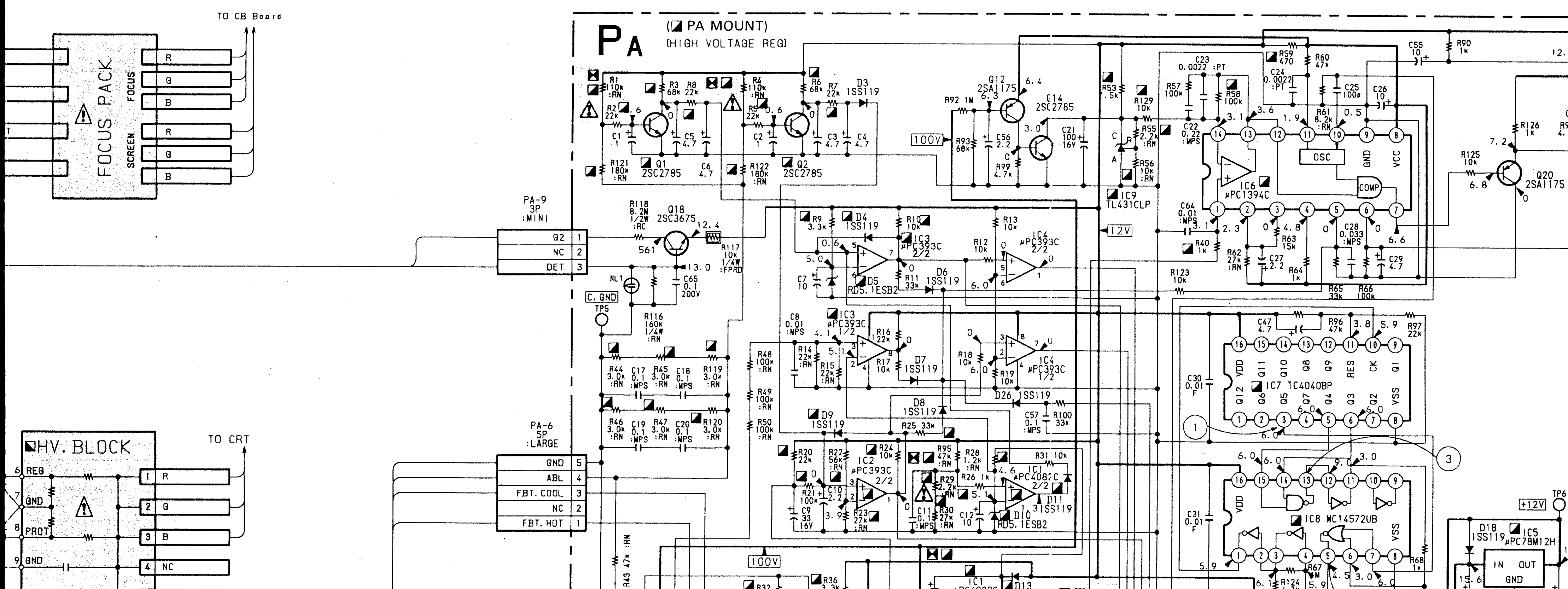
EB (B)	IC301	AN79L12	−12V REG
	302	AN78L12	+12V REG
	303 (1/2)	μ PC814C	FILTER
	303 (2/2)	μ PC814C	WAVE COMPSITION
	304	μ PC4558C	TEMP CORRECT
	Q301	2SB649A	Mg FOCUS PRE AMP
	302	2SB649A	Mg FOCUS PRE AMP
	303	2SB649A	CONSTANT CURRENT
	304	2SD669A	Mg FOCUS DRIVE
	305	2SD1977	Mg FOCUS OUT
	306	2SB1315	Mg FOCUS OUT
	307	DTC114ES	PROTECT
	308	DTC114ES	PROTECT
	309	2SC2785	PROTECT
	D301	1SS119	PROTECT
	302	1SS119	PROTECT
	303	1SS119	BIAS
	304	1SS119	BIAS
	305	RD5.1ESB2	PROTECT

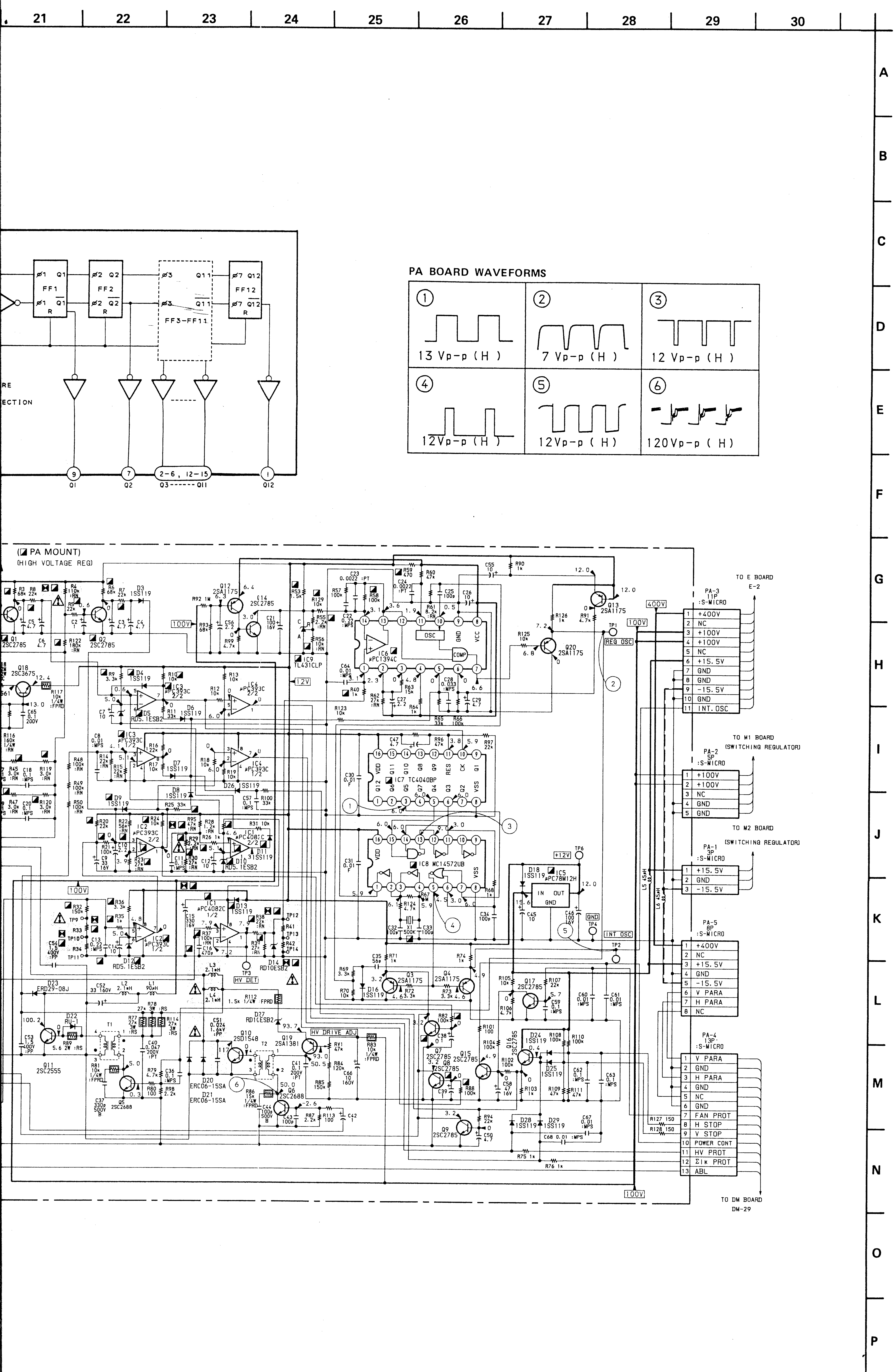
PA BOARD IC7 TC4040BP



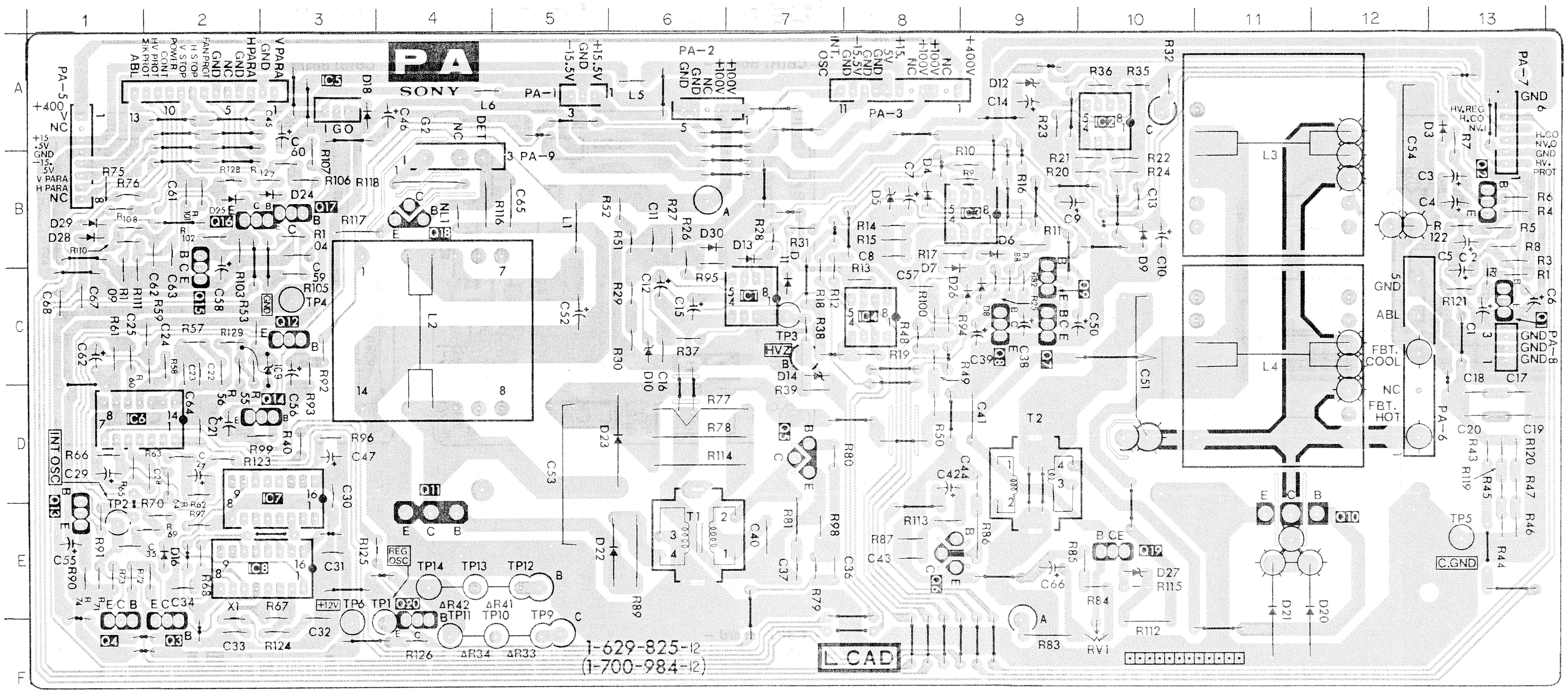
PA BOARD WAVEFORMS



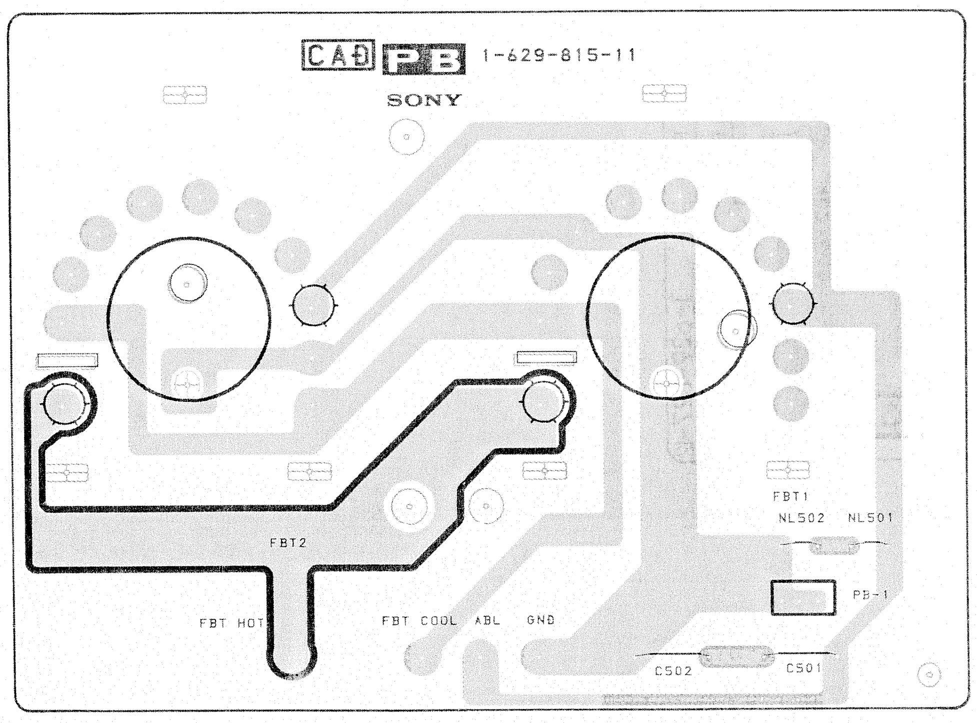



PA BOARD WAVEFORMS
13 Vp-p (H)
7 Vp-p (H)
12 Vp-p (H)
12Vp-p (H)
12Vp-p (H)
120Vp-p (H)
(PA MOUNT)
(HIGH VOLTAGE REG)
FF1
FF2
FF3-FF11
FF12
TO E BOARD
E-2
PA-3
11P
:S-MICRO
+400V
NC
+100V
+100V
NC
+15.5V
GND
GND
-15.5V
GND
INT. OSC
TO M1 BOARD
(SWITCHING REGULATOR)
PA-2
5P
:S-MICRO
+100V
+100V
NC
GND
GND
TO M2 BOARD
(SWITCHING REGULATOR)
PA-1
3P
:S-MICRO
+15.5V
GND
-15.5V
PA-5
8P
:S-MICRO
+400V
NC
+15.5V
GND
-15.5V
V PARA
H PARA
NC
PA-4
13P
:S-MICRO
V PARA
GND
H PARA
GND
NC
GND
FAN PROT
H STOP
V STOP
POWER CONT
HV PROT
ΣIK PROT
ABL
TO DM BOARD
DM-29
IC6 μPC1394C
IC7 TC4040BP
IC8 MC14572UB
IC5 μPC78M12H
IC9 TL431CLP
HV DRIVE ADJ
HV DET
REG OSC
INT OSC

– PA Board –



– PB Board –



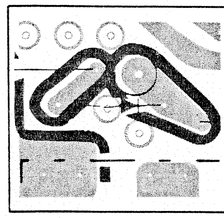
PA BOARD

IC	
IC1	C – 7
IC2	A – 10
IC3	B – 9
IC4	C – 8
IC5	A – 3
IC6	D – 1
IC7	D – 3
IC8	E – 3
IC9	C – 3

TRANSISTOR	
Q1	C – 13
Q2	B – 13
Q3	F – 2
Q4	F – 1
Q5	D – 7
Q6	E – 8
Q7	C – 9
Q8	C – 9
Q9	C – 9
Q10	E – 11
Q11	E – 4
Q12	C – 3
Q13	E – 1
Q14	D – 3
Q15	C – 2
Q16	B – 2
Q17	B – 3
Q18	B – 4
Q19	E – 10
Q20	F – 4

DIODE	
D3	A – 13
D4	B – 8
D5	B – 8
D6	B – 9
D7	C – 8
D8	C – 9
D9	B – 10
D10	C – 6
D11	C – 7
D12	A – 9
D13	B – 7
D14	C – 7
D16	E – 2
D18	A – 3
D20	E – 11
D21	E – 11
D22	E – 6
D23	D – 6
D24	B – 3
D25	B – 2
D26	C – 9
D27	E – 10
D28	B – 1
D29	B – 1

VARIABLE RESISTOR	
RV1	F – 10



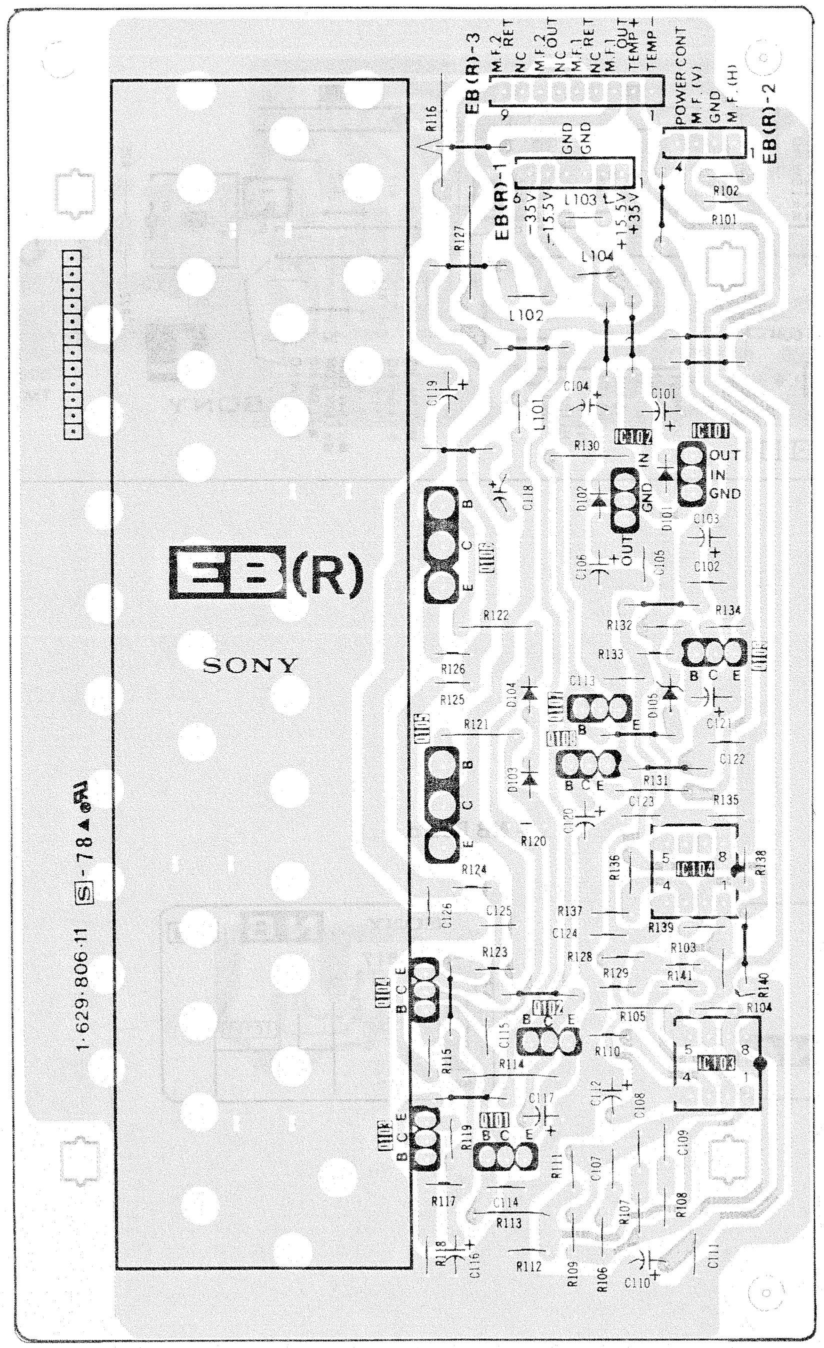
NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

EB(R) [Mg FOCUS OUT(R)]

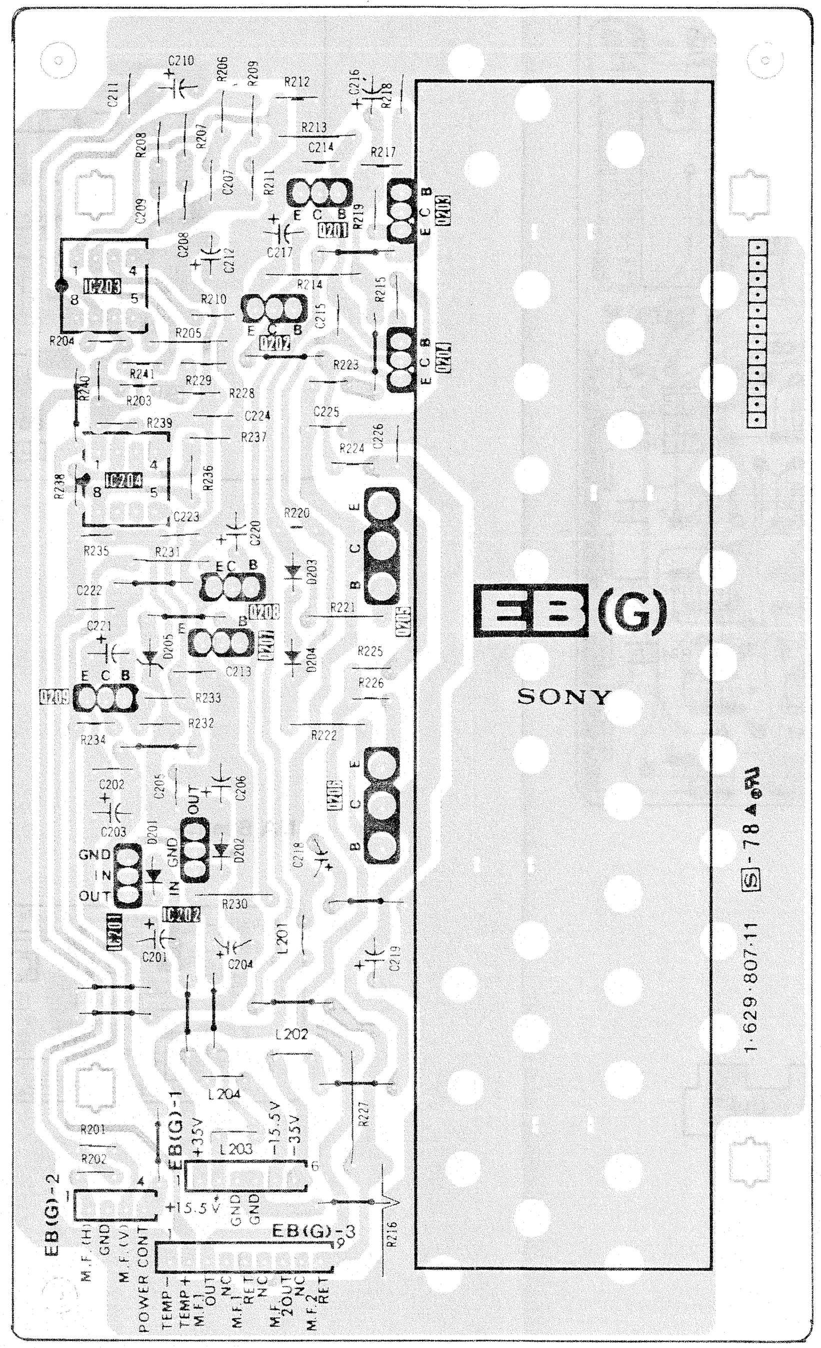
EB(G) [Mg FOCUS OUT(G)]

EB(B) [Mg FOCUS OUT(B)]

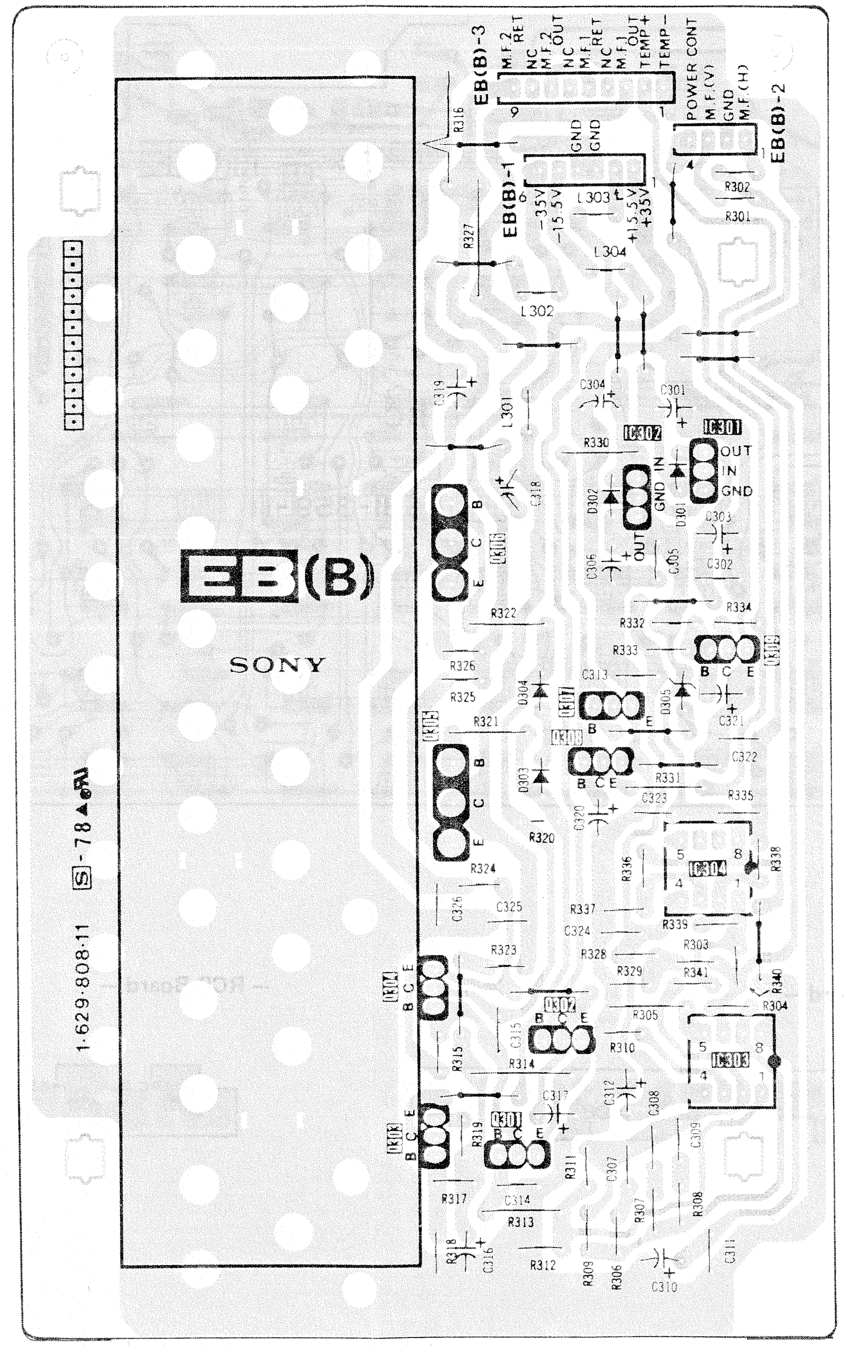
– EB(R) Board –



– EB(G) Board –

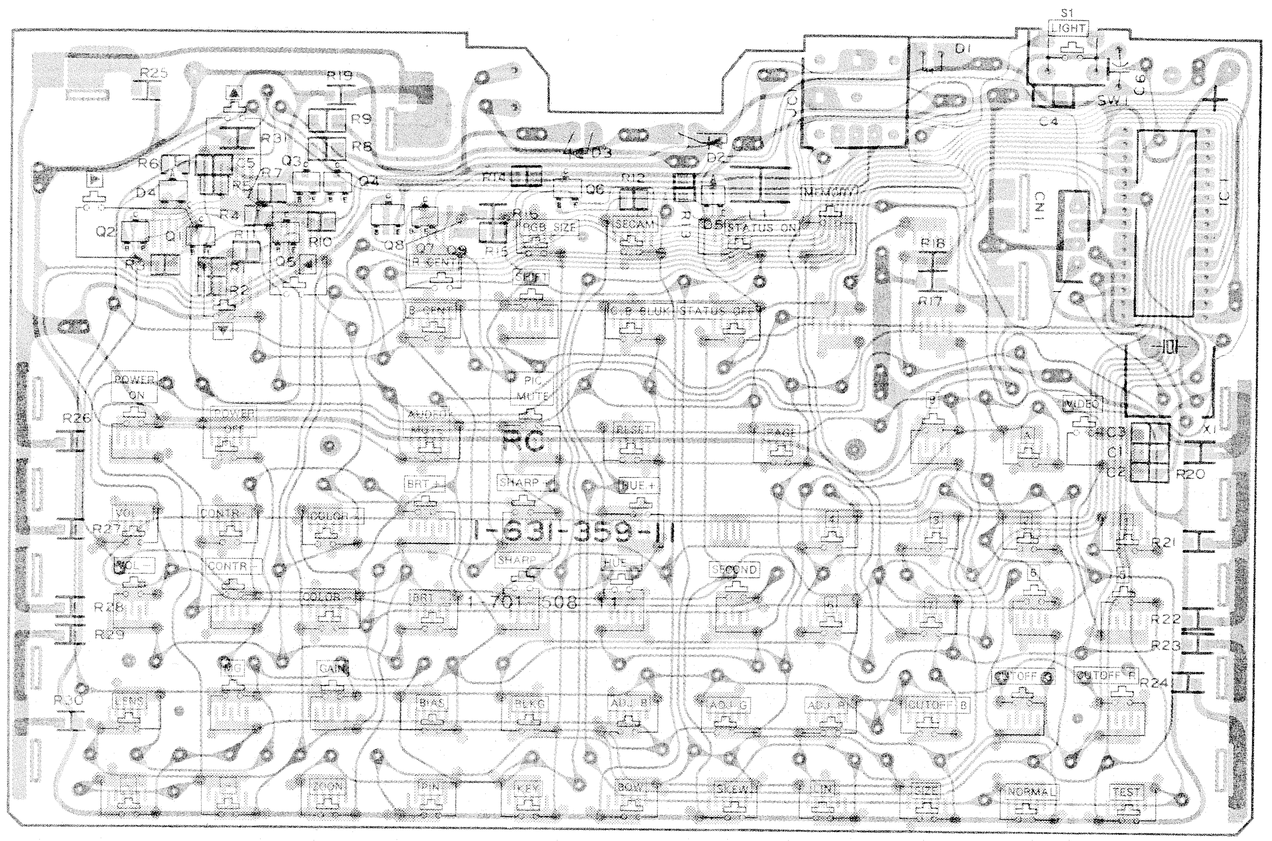


– EB(B) Board –

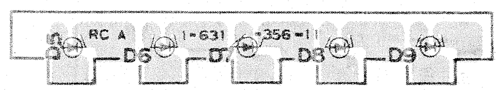


RCA RCB RCC RCD RC [CONTROL] L [LENS FOCUS CONT] NA [RECEIVER] NB [RECEIVER]

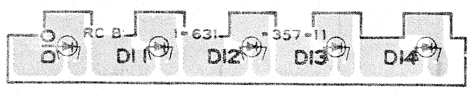
– RC Board –



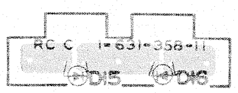
– RCA Board –



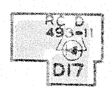
– RCB Board –



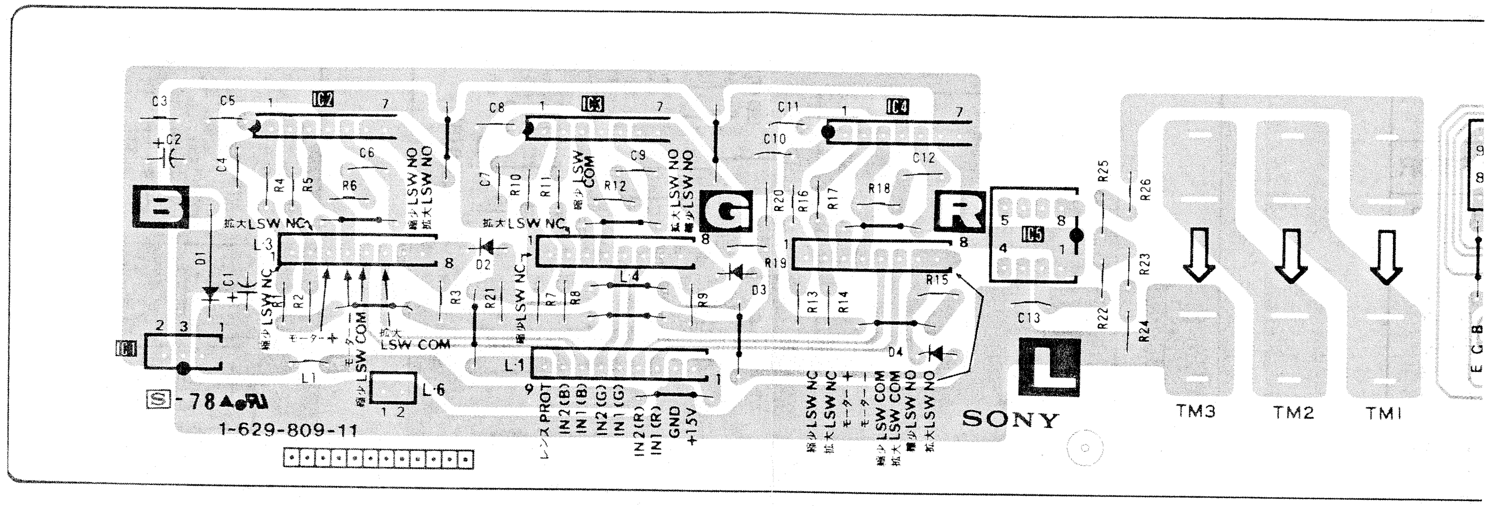
– RCC Board –



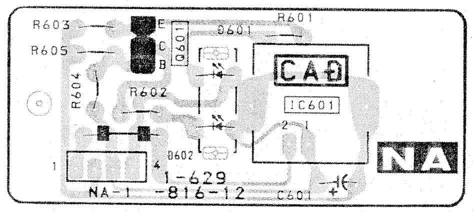
– RCD Board –



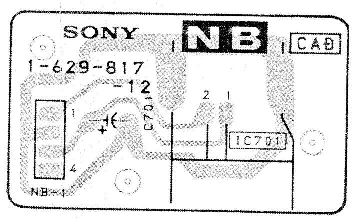
– L Board –

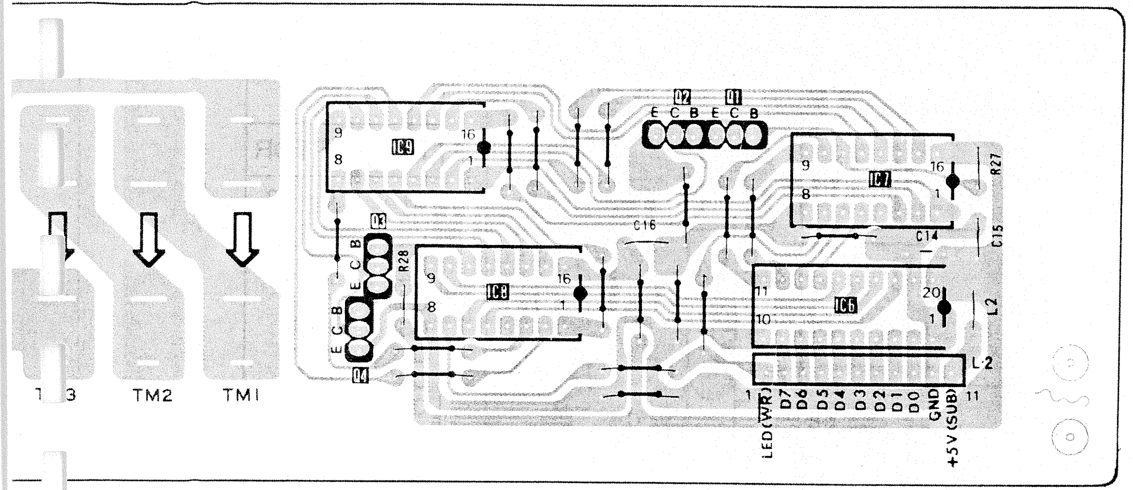


–NA Board –



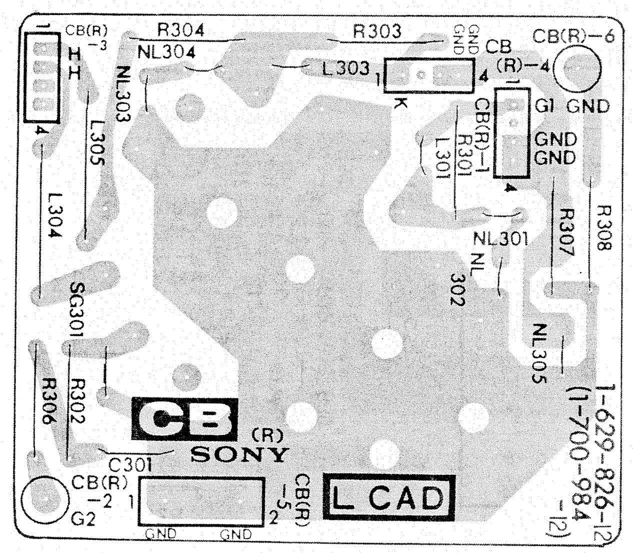
– NB Board –



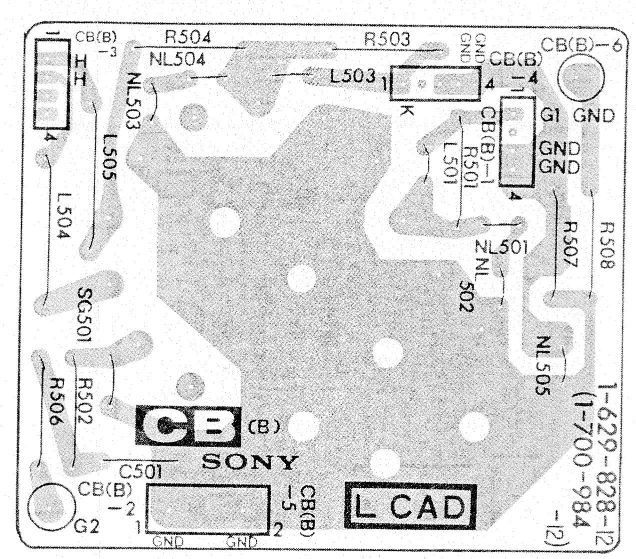


CB(R) [CRT SOCKET] CB(G) [CRT SOCKET] CB(B) [CRT SOCKET]

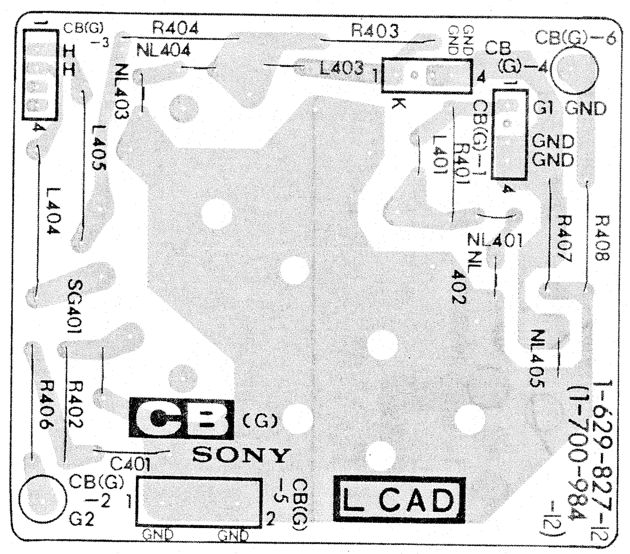
– CB(R) Board –

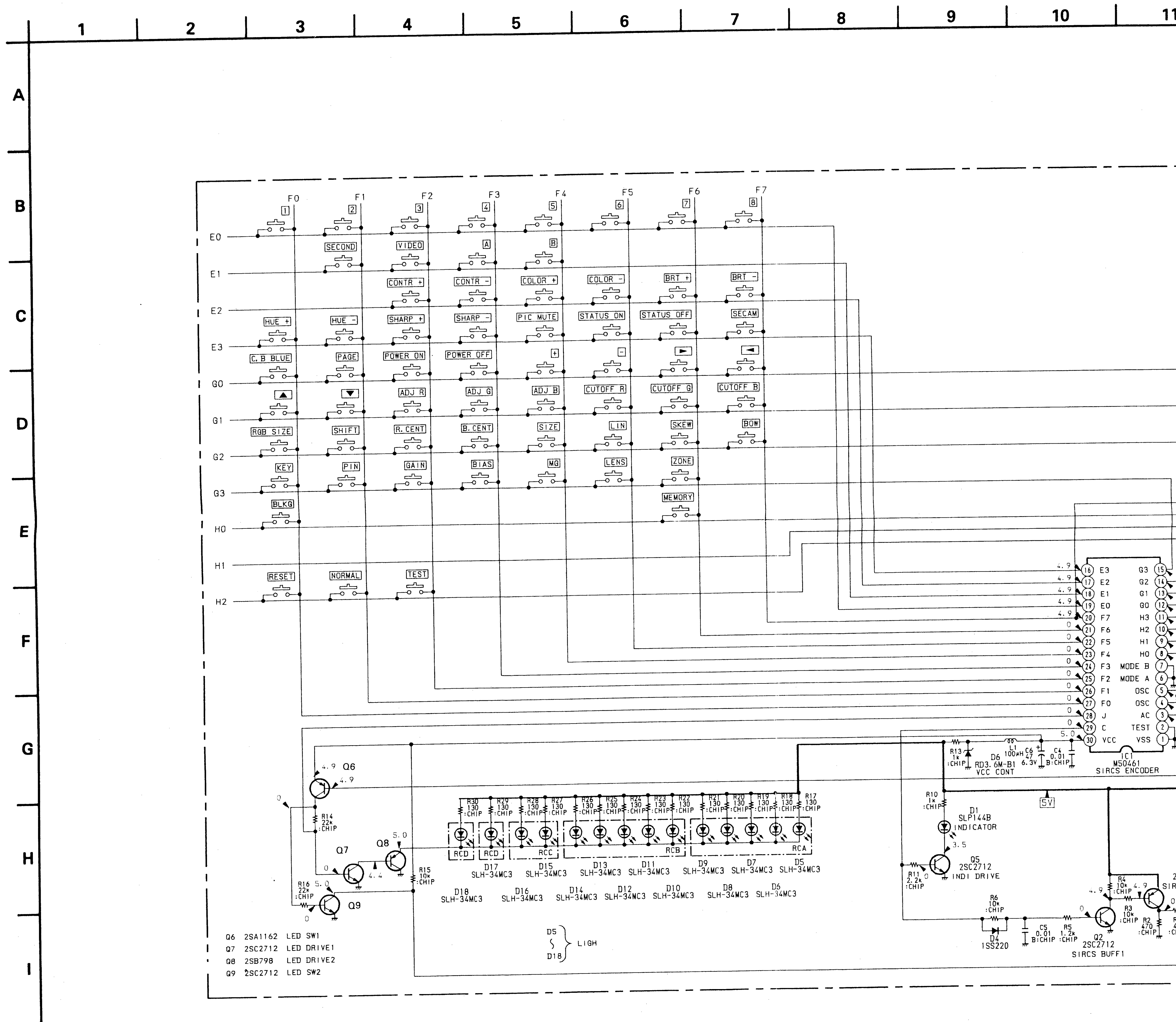


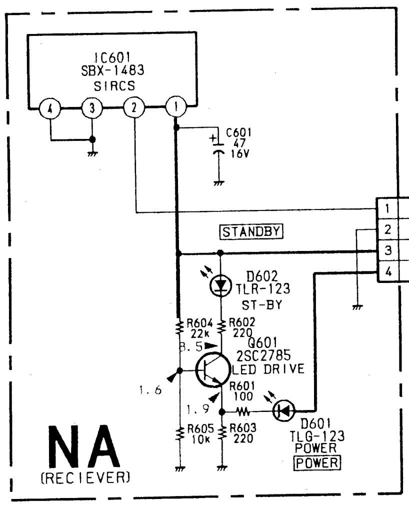
– CB(B) Board –



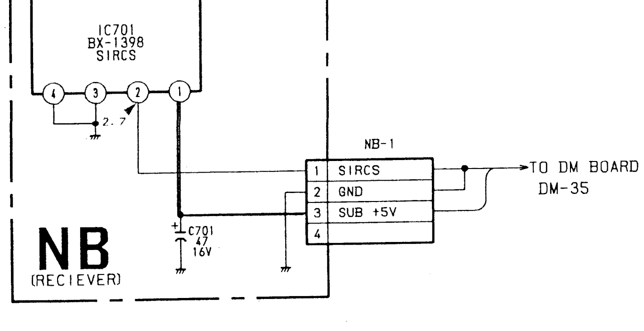
– CB(G) Board –



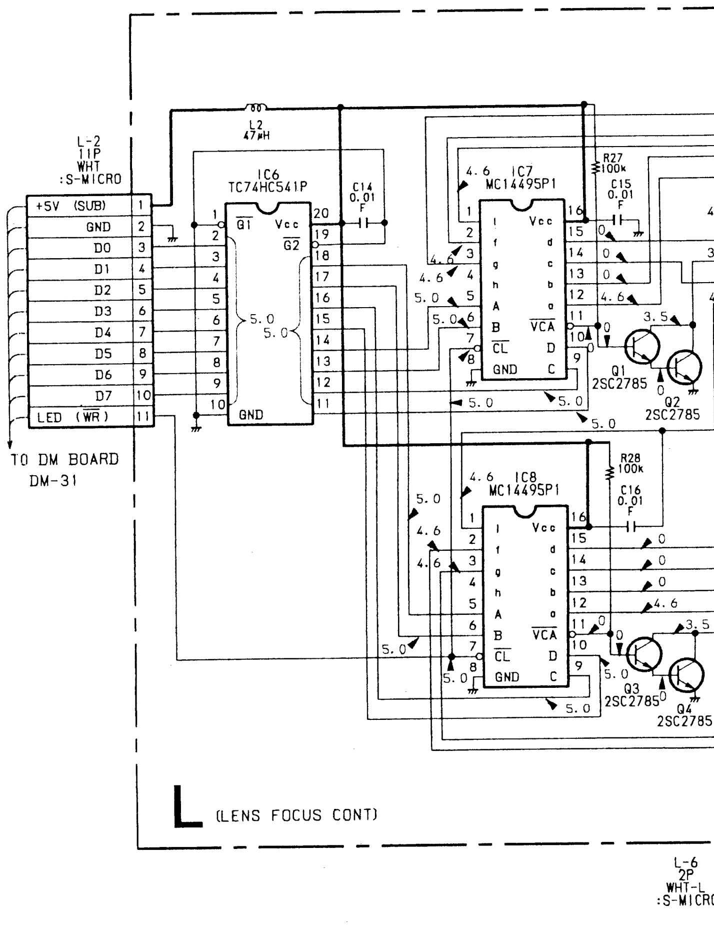




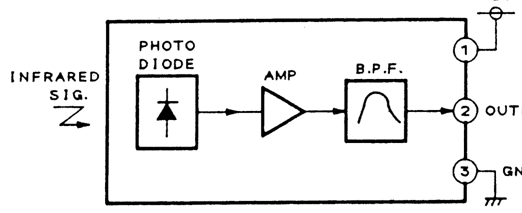
NA	IC601	SBX-1483	SIRCS
	Q601	2SC2785	LED DRIVE
	D601	TLG-123	POWER
	602	TLR-123	ST-BY



NB	IC701	BX-1398	SIRCS

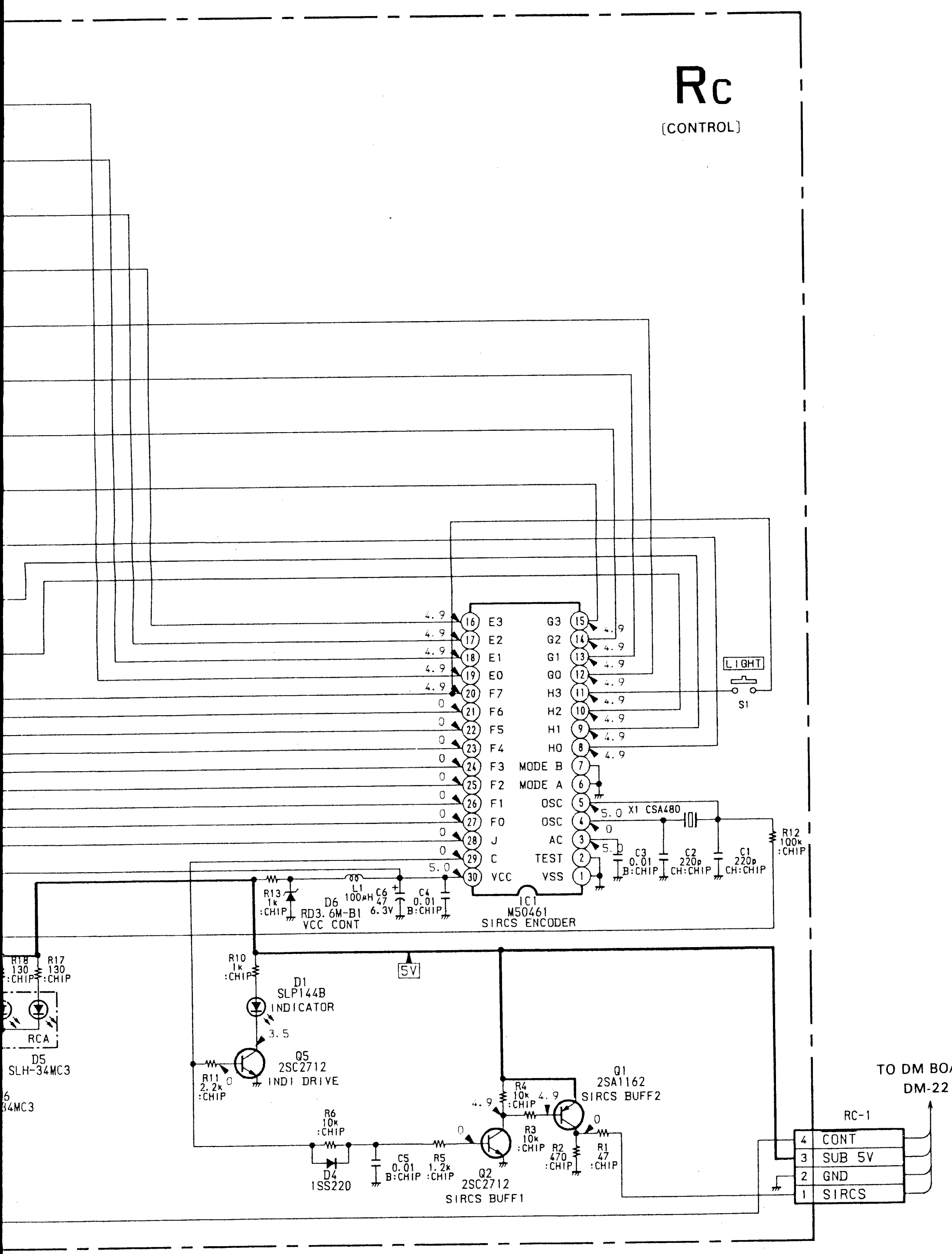


NA BOARD IC601 SBX-1483
NA BOARD IC607 BX-1398

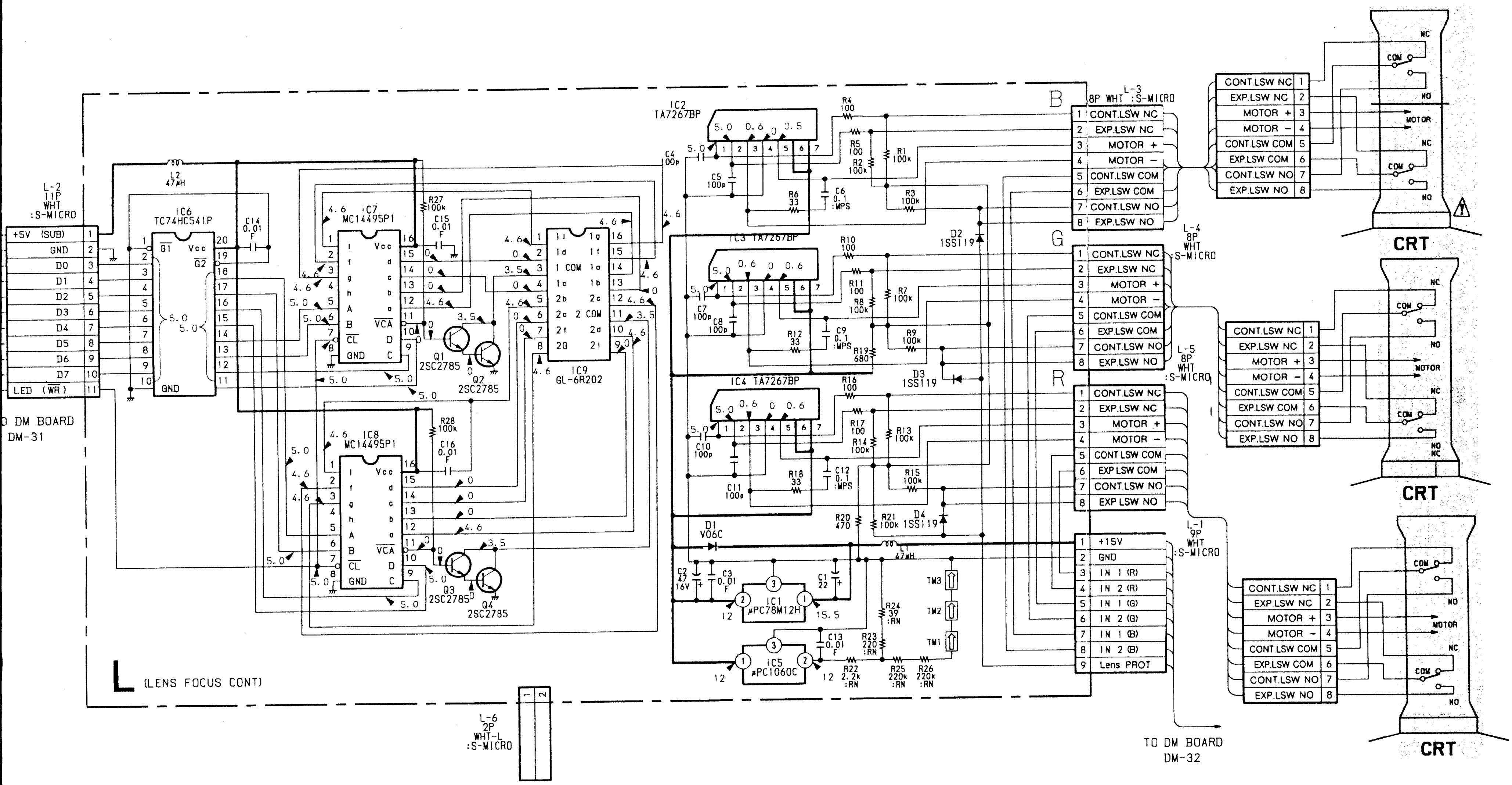


IN1	IN2	OUT1	OUT2	Mode
H	H	L	L	Brake
H	L	H	L	Forwaed (contraction)
L	H	L	H	Reverse (expansion)
L	L	HIGH IMPE		Stop

8 9 10 11 12 13 14 15 16 17 18 19

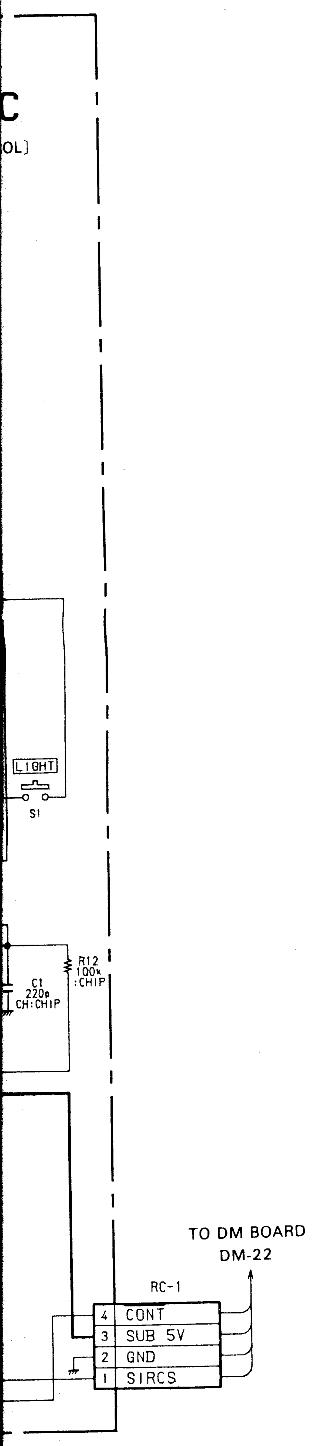


L	IC1	μ PC78M12H	+ 12V REG
	2	TA7267BP	MOTOR DRIVE
	3	TA7267BP	MOTOR DRIVE
	4	TA7267BP	MOTOR DRIVE
	5	μ PC1060C	CONSTANT VOLTAGE
	6	TC74HC541P	DECODER
	7	MC14495P1	DECODER
	8	MC14495P1	DECODER
	9	GL-6R202	DISPLAY
	Q1	2SC2785	BUFFER
	2	2SC2785	BUFFER
	3	2SC2785	BUFFER
	4	2SC2785	BUFFER
	D1	V06C	PROTECT
	2	1SS119	SWITCH
	3	1SS119	SWITCH
	4	1SS119	SWITCH

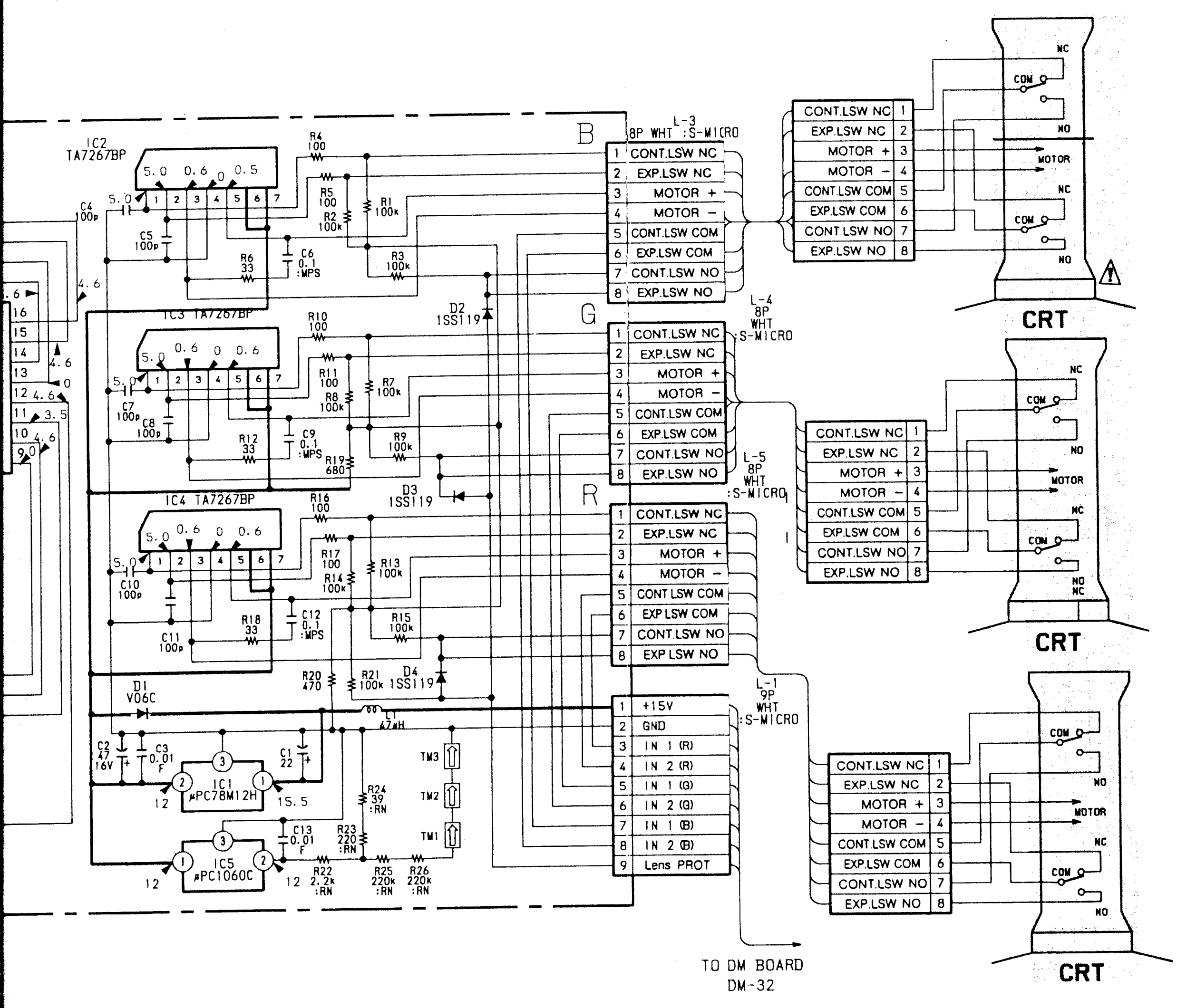


CONT. LSW : CONTRACTION LSW
EXP. LSW : EXPANSION LSW

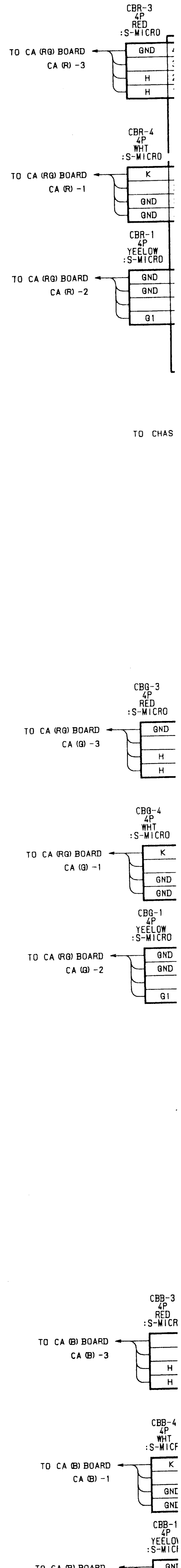
IN1	IN2	OUT1	OUT2	Mode
H	H	L	L	Brake
H	L	H	L	Forwaed (contraction)
L	H	L	H	Reverse (expansion)
L	L	HIGH IMPE		Stop

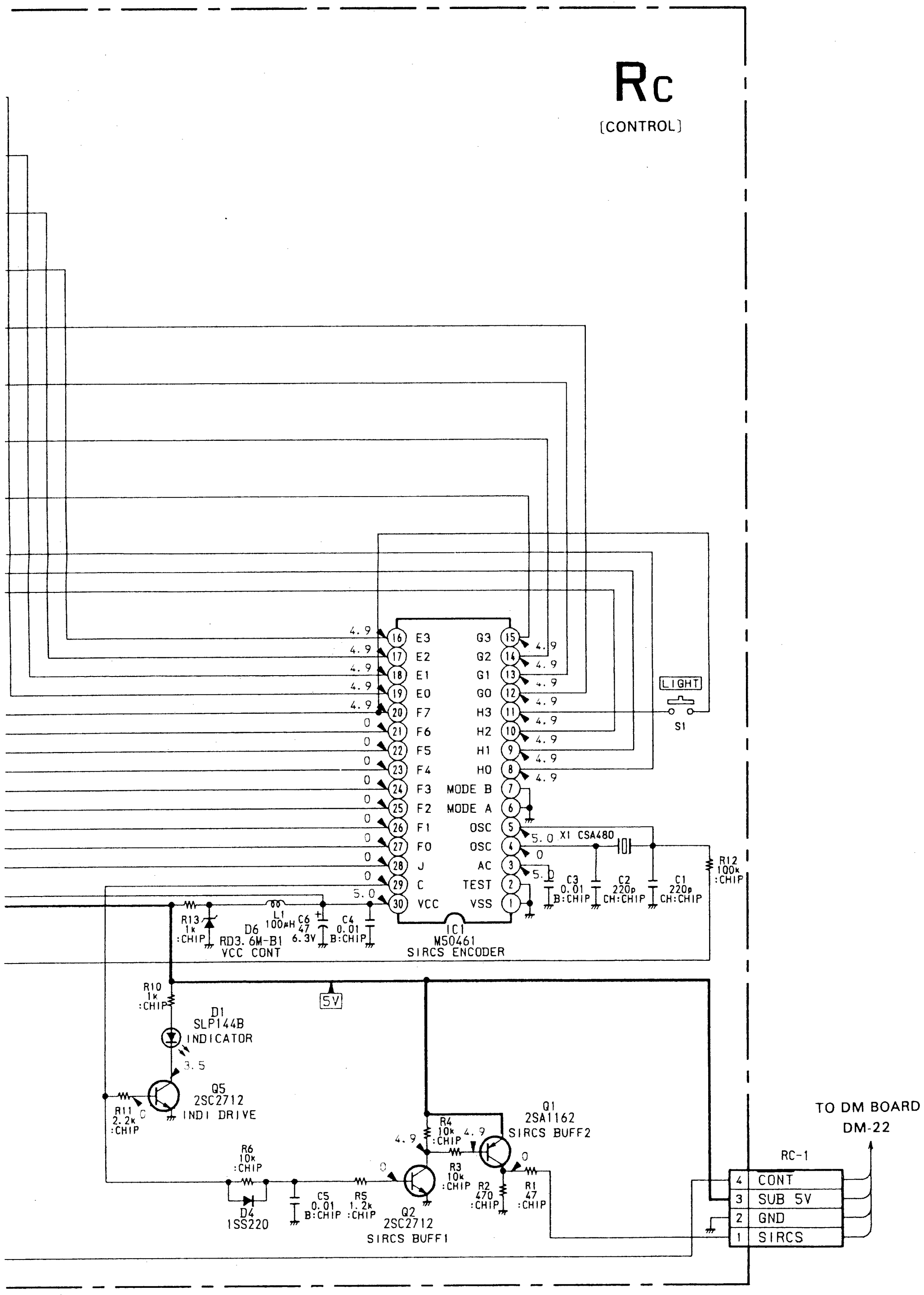


L	IC1	μ PC78M12H	+ 12V REG
	2	TA7267BP	MOTOR DRIVE
	3	TA7267BP	MOTOR DRIVE
	4	TA7267BP	MOTOR DRIVE
	5	μ PC1060C	CONSTANT VOLTAGE
	6	TC74HC541P	DECODER
	7	MC14495P1	DECODER
	8	MC14495P1	DECODER
	9	GL-6R202	DISPLAY
	Q1	2SC2785	BUFFER
	2	2SC2785	BUFFER
	3	2SC2785	BUFFER
	4	2SC2785	BUFFER
	D1	V06C	PROTECT
	2	1SS119	SWITCH
	3	1SS119	SWITCH
	4	1SS119	SWITCH

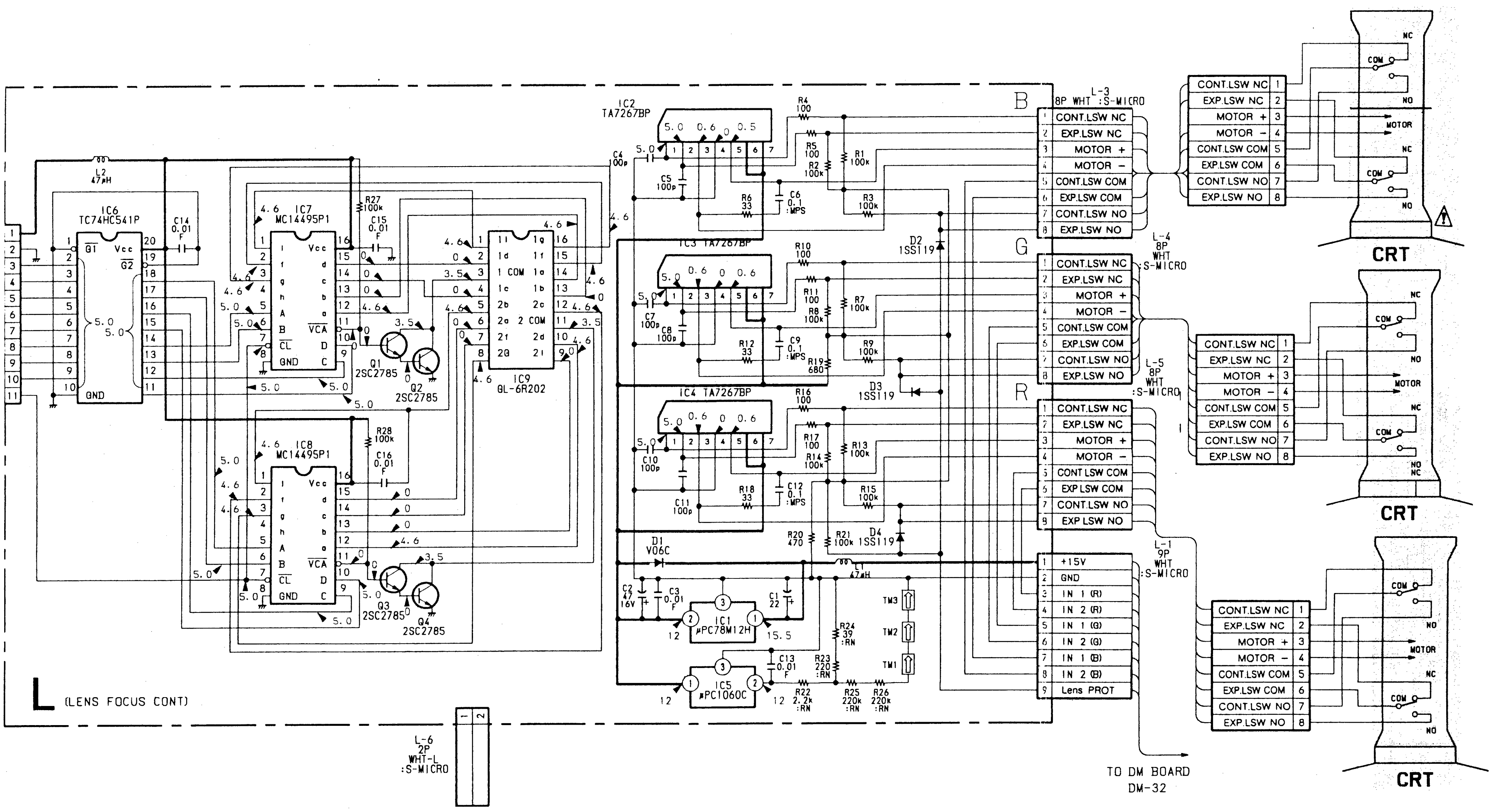


CONT. LSW : CONTRACTION LSW
EXP. LSW : EXPANSION LSW



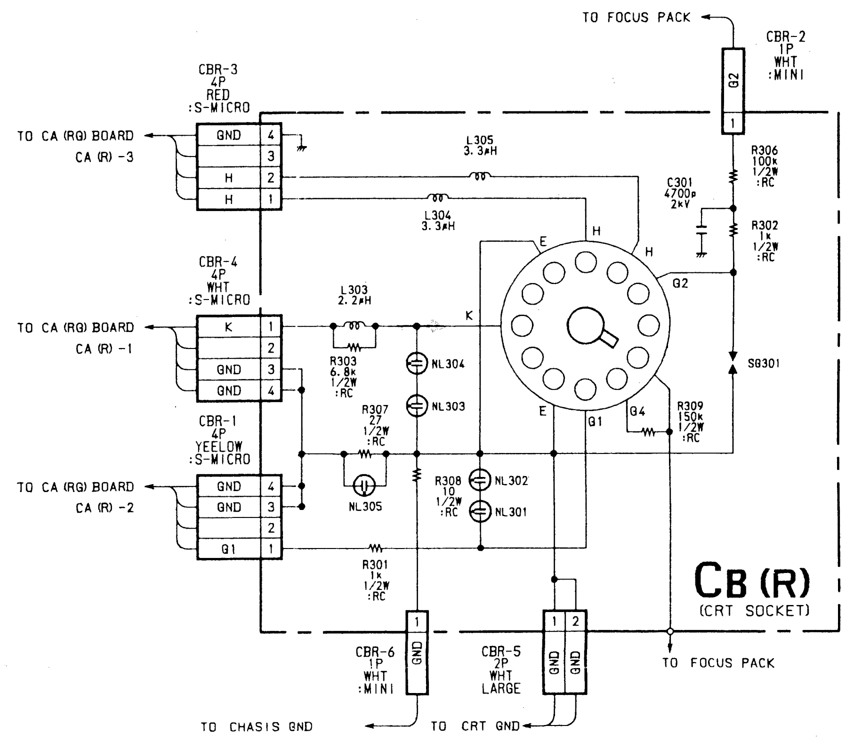


L	IC1	μ PC78M12H	+12V REG
	2	TA7267BP	MOTOR DRIVE
	3	TA7267BP	MOTOR DRIVE
	4	TA7267BP	MOTOR DRIVE
	5	μ PC1060C	CONSTANT VOLTAGE
	6	TC74HC541P	DECODER
	7	MC14495P1	DECODER
	8	MC14495P1	DECODER
	9	GL-6R202	DISPLAY
	Q1	2SC2785	BUFFER
	2	2SC2785	BUFFER
	3	2SC2785	BUFFER
	4	2SC2785	BUFFER
	D1	V06C	PROTECT
	2	1SS119	SWITCH
	3	1SS119	SWITCH
	4	1SS119	SWITCH

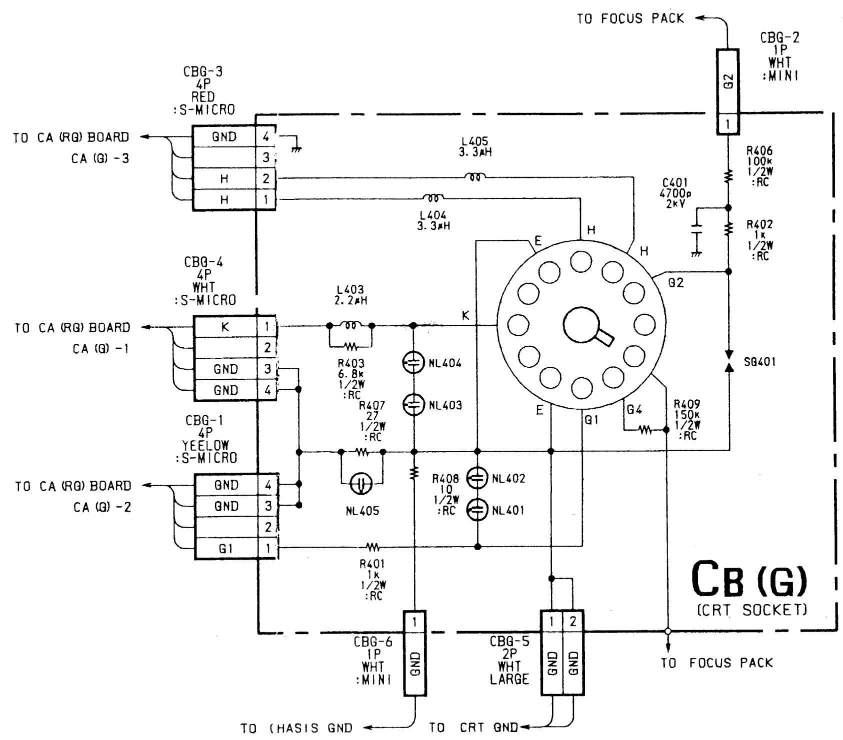


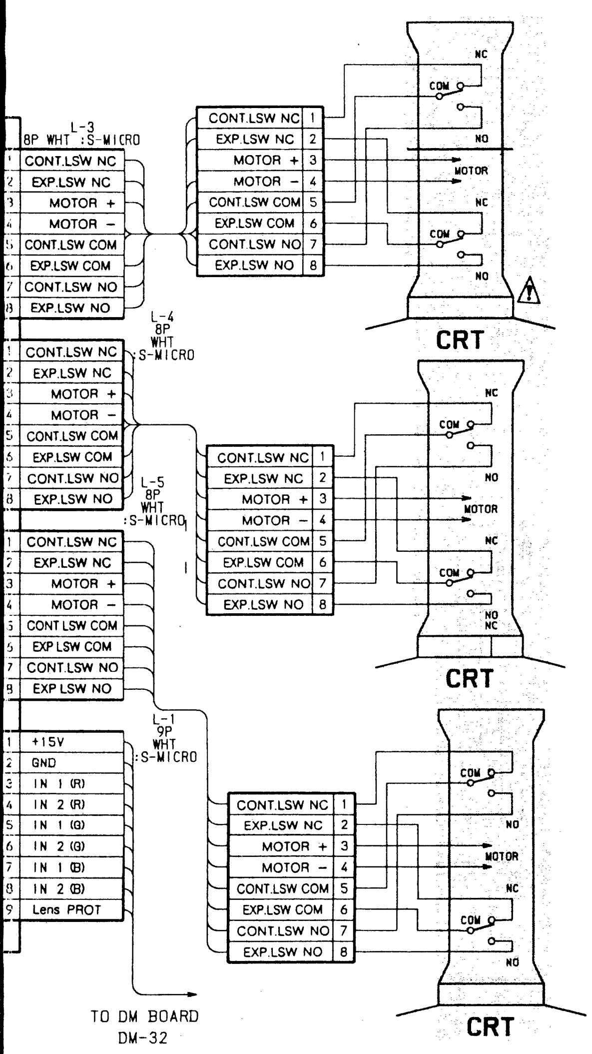
N1	IN2	OUT1	OUT2	Mode
H	H	L	L	Brake
H	L	H	L	Forwaed (contraction)
L	H	L	H	Reverse (expansion)
L	L	HIGH IMPE		Stop

CONT. LSW : CONTRACTION LSW
EXP. LSW : EXPANSION LSW

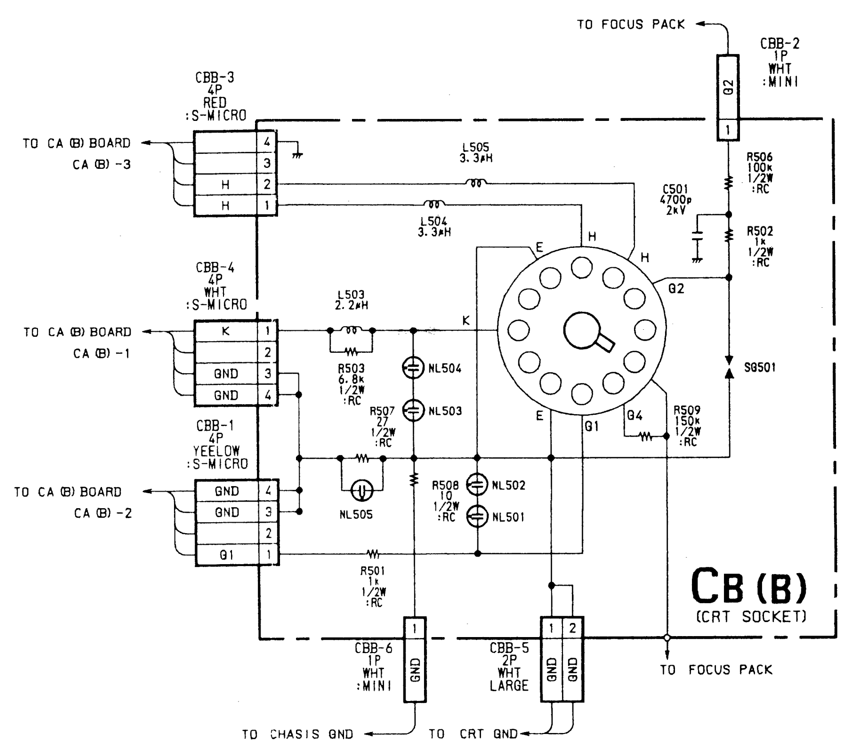


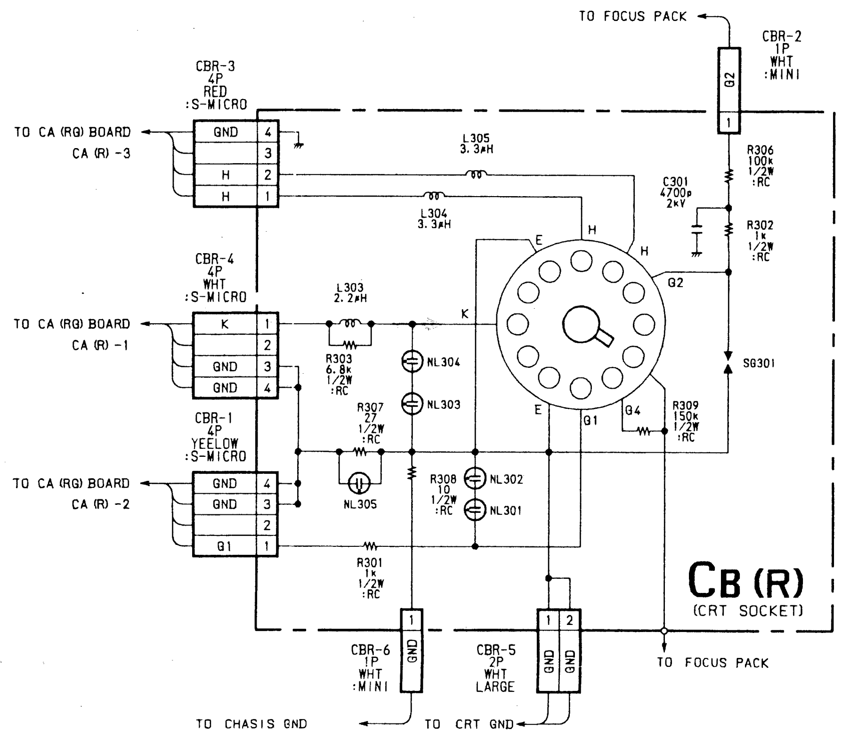
L			
	IC1	μ PC78M12H	+ 12V REG
	2	TA7267BP	MOTOR DRIVE
	3	TA7267BP	MOTOR DRIVE
	4	TA7267BP	MOTOR DRIVE
	5	μ PC1060C	CONSTANT VOLTAGE
	6	TC74HC541P	DECODER
	7	MC14495P1	DECODER
	8	MC14495P1	DECODER
	9	GL-6R202	DISPLAY
	Q1	2SC2785	BUFFER
	2	2SC2785	BUFFER
	3	2SC2785	BUFFER
	4	2SC2785	BUFFER
	D1	V06C	PROTECT
	2	1SS119	SWITCH
	3	1SS119	SWITCH
	4	1SS119	SWITCH

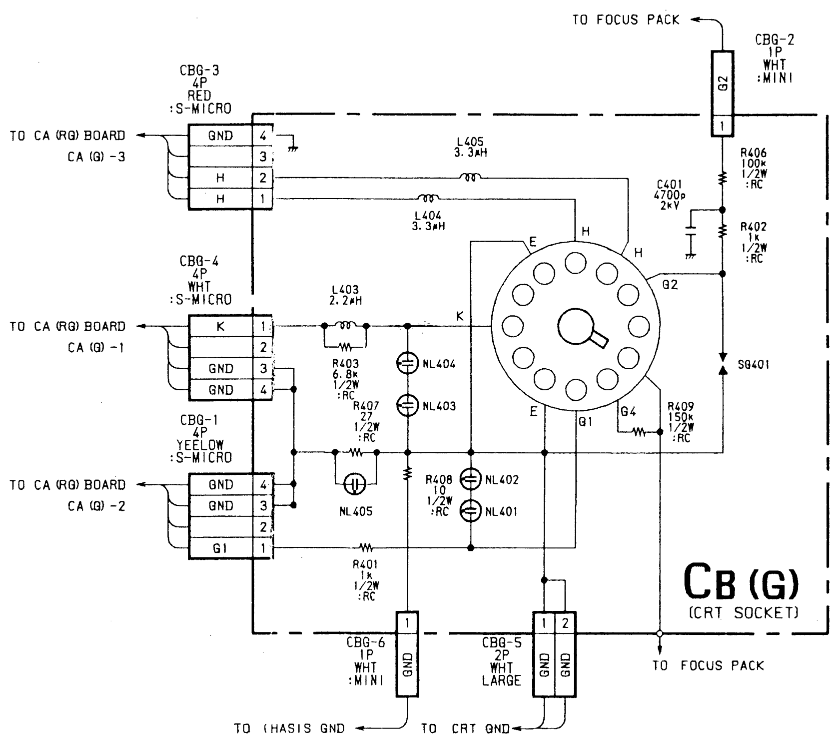


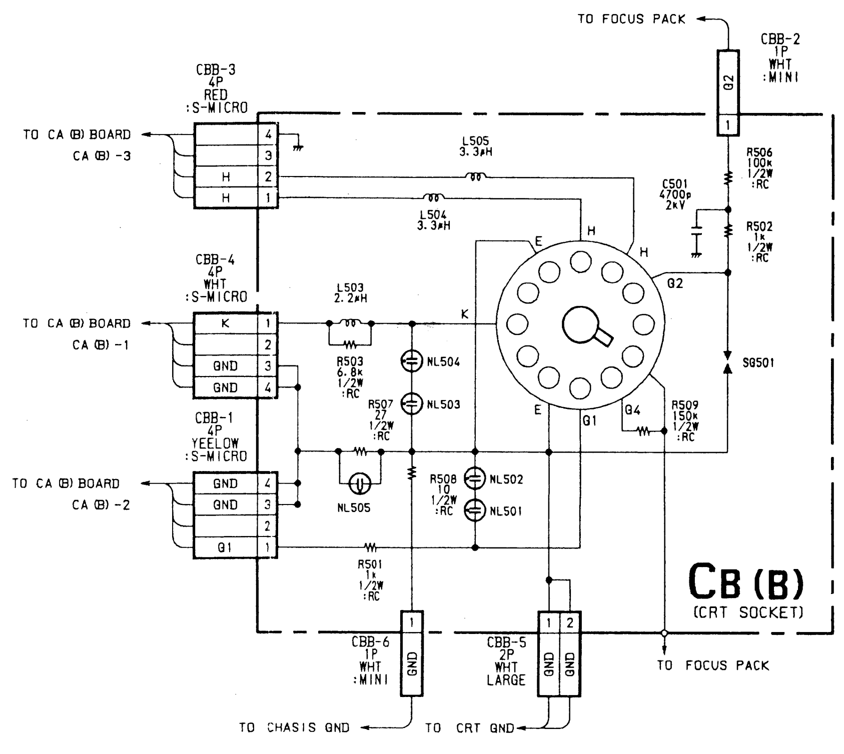


CONT. LSW : CONTRACTION LSW
EXP. LSW : EXPANSION LSW

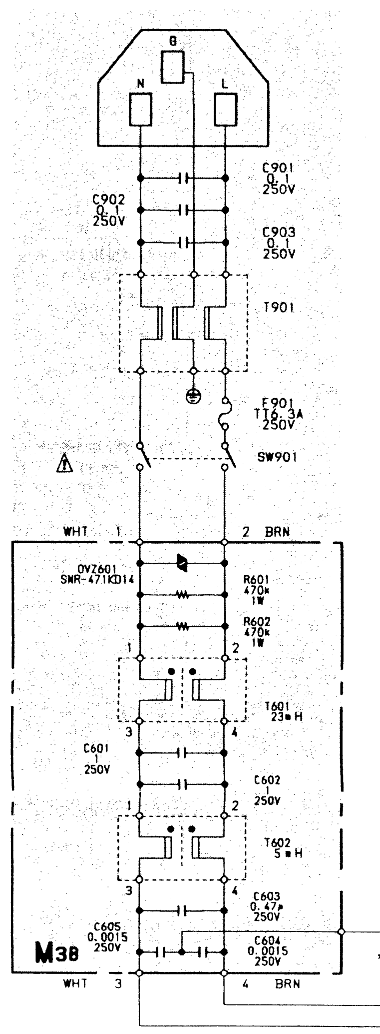



TO FOCUS PACK
CBR-2 1P WHT :MINI
CBR-3 4P RED :S-MICRO
TO CA (RG) BOARD CA (R) -3
GND
H
H
L305 3.3μH
L304 3.3μH
C301 4700p 2kV
R306 100k 1/2W :RC
R302 1k 1/2W :RC
CBR-4 4P WHT :S-MICRO
TO CA (RG) BOARD CA (R) -1
K
GND
GND
L303 2.2μH
R303 6.8k 1/2W :RC
NL304
NL303
SG301
CBR-1 4P YEELOW :S-MICRO
TO CA (RG) BOARD CA (R) -2
GND
GND
G1
R307 27 1/2W :RC
NL305
R308 10 1/2W :RC
NL302
NL301
R309 150k 1/2W :RC
R301 1k 1/2W :RC
CB (R)
(CRT SOCKET)
CBR-6 1P WHT :MINI
CBR-5 2P WHT LARGE
TO FOCUS PACK
TO CHASIS GND
TO CRT GND


TO FOCUS PACK
CBG-2 1P WHT :MINI
CBG-3 4P RED :S-MICRO
TO CA (RG) BOARD CA (G) -3
GND
H
H
L405 3.3μH
L404 3.3μH
C401 4700p 2kV
R406 100k 1/2W :RC
R402 1k 1/2W :RC
CBG-4 4P WHT :S-MICRO
TO CA (RG) BOARD CA (G) -1
K
GND
GND
L403 2.2μH
R403 6.8k 1/2W :RC
NL404
NL403
SG401
CBG-1 4P YEELOW :S-MICRO
TO CA (RG) BOARD CA (G) -2
GND
GND
G1
R407 27 1/2W :RC
NL405
R408 10 1/2W :RC
NL402
NL401
R409 150k 1/2W :RC
R401 1k 1/2W :RC
CB (G)
(CRT SOCKET)
CBG-6 1P WHT :MINI
CBG-5 2P WHT LARGE
TO FOCUS PACK
TO CHASIS GND
TO CRT GND

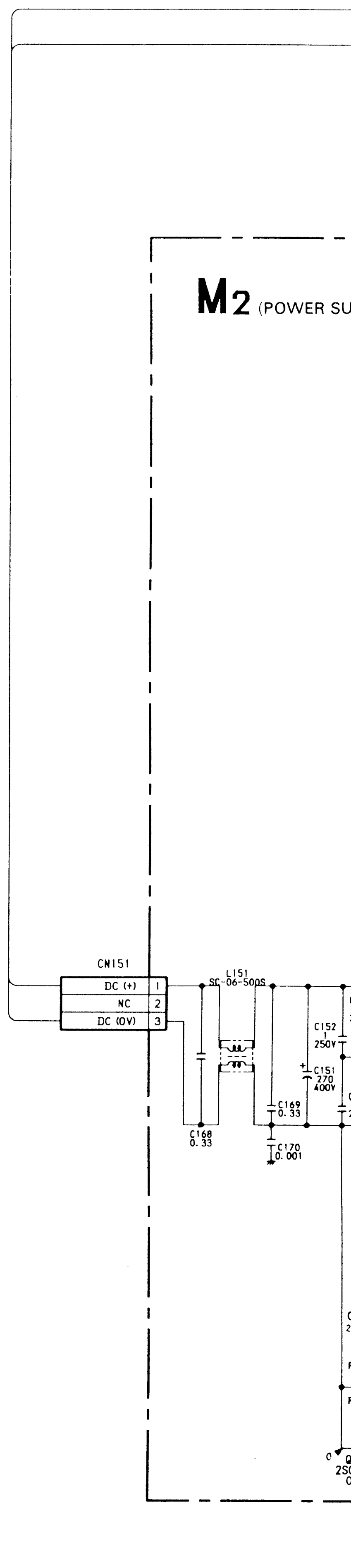

TO FOCUS PACK
CBB-2 1P WHT :MINI
CBB-3 4P RED :S-MICRO
TO CA (B) BOARD CA (B) -3
H
H
L505 3.3μH
L504 3.3μH
C501 4700p 2kV
R506 100k 1/2W :RC
R502 1k 1/2W :RC
CBB-4 4P WHT :S-MICRO
TO CA (B) BOARD CA (B) -1
K
GND
GND
L503 2.2μH
R503 6.8k 1/2W :RC
NL504
NL503
SG501
CBB-1 4P YEELOW :S-MICRO
TO CA (B) BOARD CA (B) -2
GND
GND
G1
R507 27 1/2W :RC
NL505
R508 10 1/2W :RC
NL502
NL501
R509 150k 1/2W :RC
R501 1k 1/2W :RC
CB (B)
(CRT SOCKET)
CBB-6 1P WHT :MINI
CBB-5 2P WHT LARGE
TO FOCUS PACK
TO CHASIS GND
TO CRT GND

	Ref.	Part	Function
M1	IC201	μ PC358	CMP
	202	TL431C	2.5V REF VOLT
	203	μ PC358C	AMP
	204	TL431C	5.0V REF VOLT
	Q101	2SK827	CONV
	102	2SK827	CONV
	103	2SK827	CONV
	104	2SK827	CONV
	105	2SB733	SPEED UP
	106	2SB733	SPEED UP
	201	2SC3042	210V REG
	202	2SA1156	210V REG
	203	2SC2752	210V REG
	204	2SA1175	OV
	205	2SA1175	OV
	206	2SA1175	OV
	207	2SA1175	OV
	208	2SK422	DRIVE
	209	2SK422	DRIVE
	D101	S15VB60	AC RECT
	102	11EQS04	RECT
	103	11EQS04	RECT
	201	ERC33-06	210V RECT
	202	ERC33-06	210V RECT
	203	ERC33-06	210V RECT
	204	ERC33-06	210V RECT
	205	ESAD39-06C	100V RECT
	206	ESAD39-06N	100V RECT
	207	U05G	CLAMP
	208	U05G	CLAMP
	209	RD5.6ESB2	CORRECT
	210	1SS119	DC SHIFT
	211	1SS119	DC SHIFT
	213	RD39ESB	CLAMP
	214	RD39ESB	CLAMP
	215	1SS119	DC SHIFT
	216	1SS119	DC SHIFT
	218	1SS119	PROT
	219	1SS119	PROT
	220	1SS119	PROT

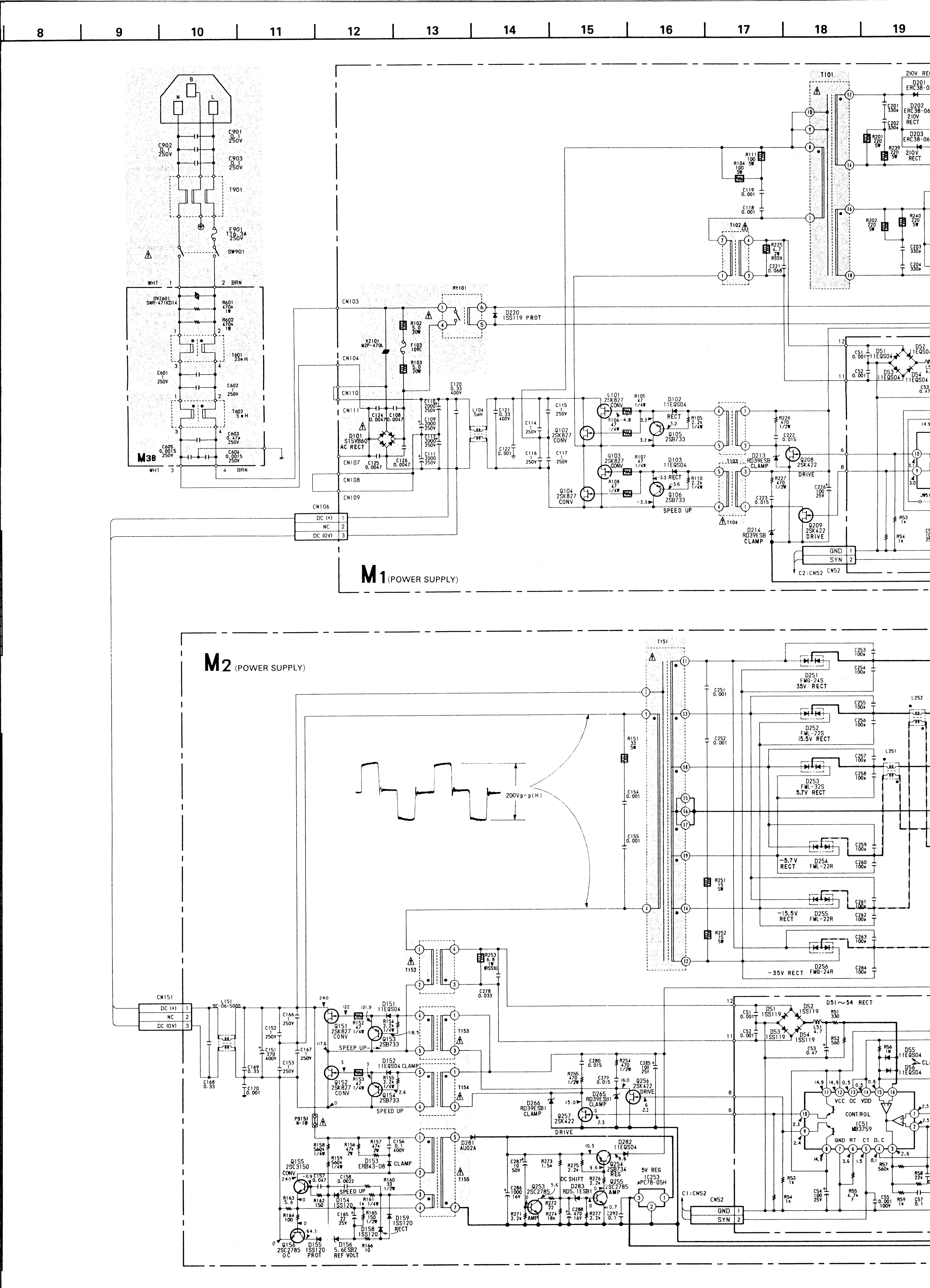


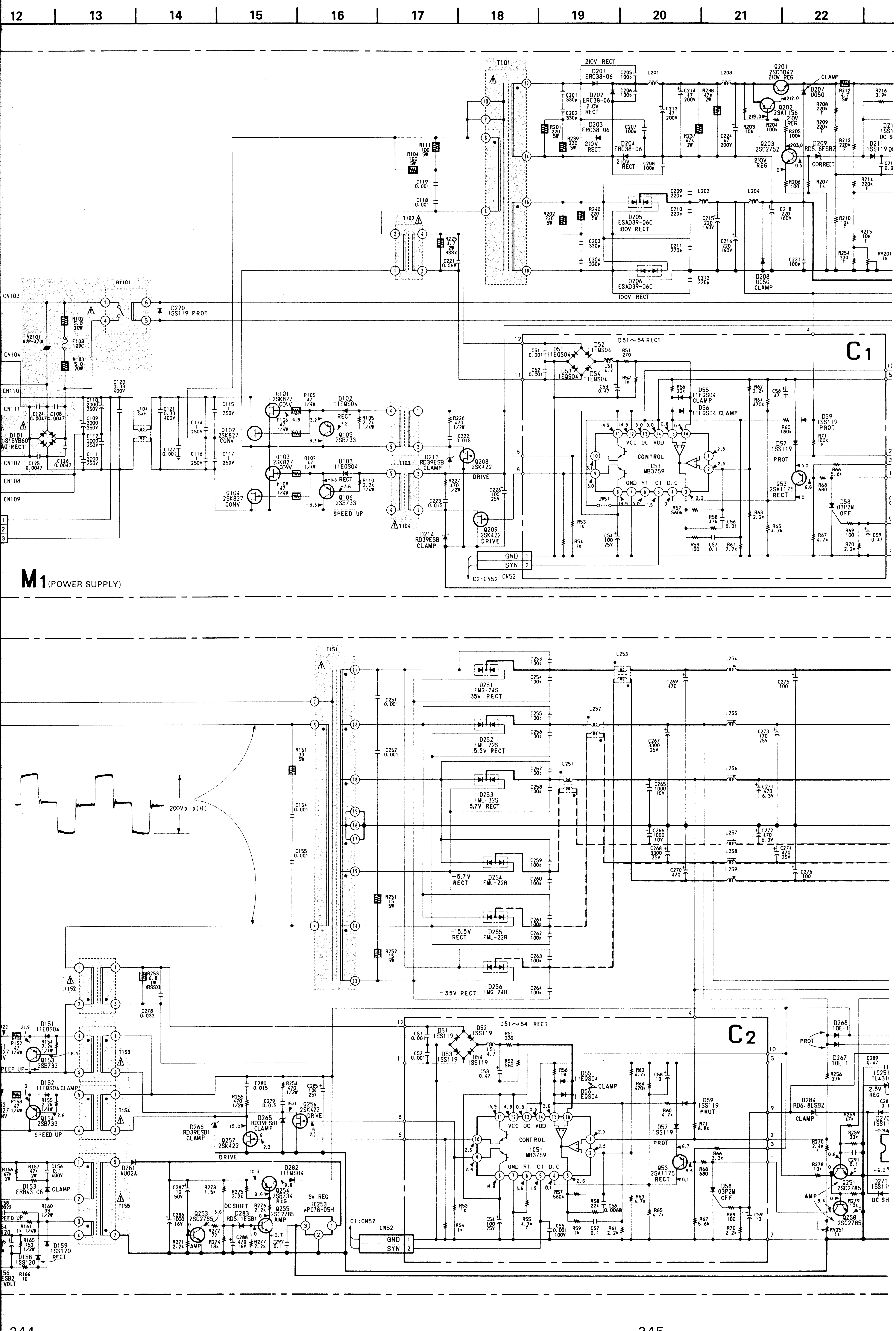
	Ref.	Part	Function
C1	IC051	MB3759	CONTROL
	Q053	2SA1175	AMP
	D051	11EQS04	RECT
	052	11EQS04	RECT
	053	11EQS04	RECT
	054	11EQS04	RECT
	055	11EQS04	CLAMP
	056	11EQS04	CLAMP
	057	1SS119	PROT
	058	03P2M	OFF
	059	1SS119	PROT

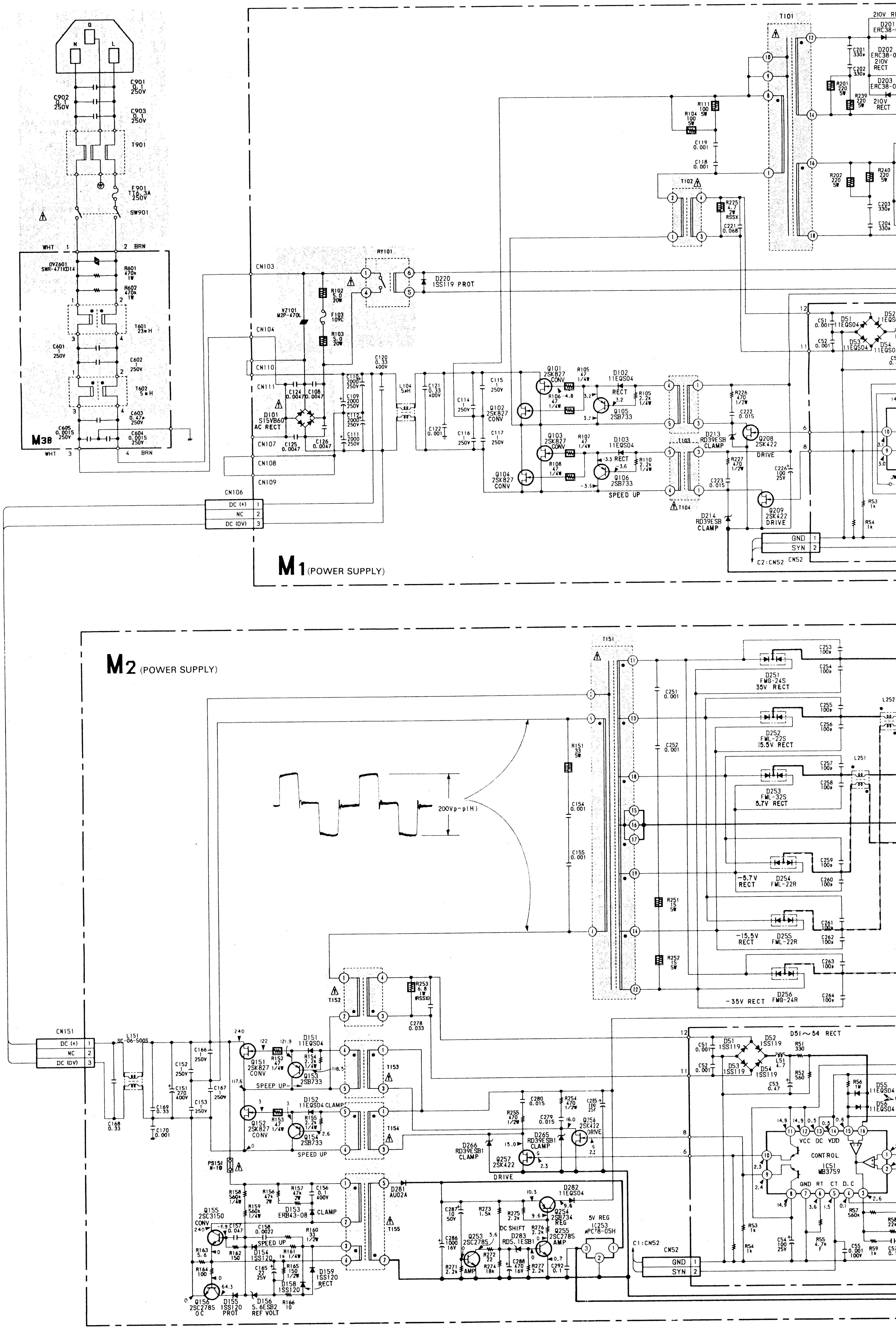
	Ref.	Part	Function
C2	IC051	MB3759	CONTROL
	Q053	2SA1175	AMP
	D051	IIEQS04	RECT
	052	IIEQS04	RECT
	053	IIEQS04	RECT
	054	IIEQS04	RECT
	055	IIEQS04	CLAMP
	056	IIEQS04	CLAMP
	057	1SS119	PROT
	058	03P2M	OFF
	059	1SS119	PRORT

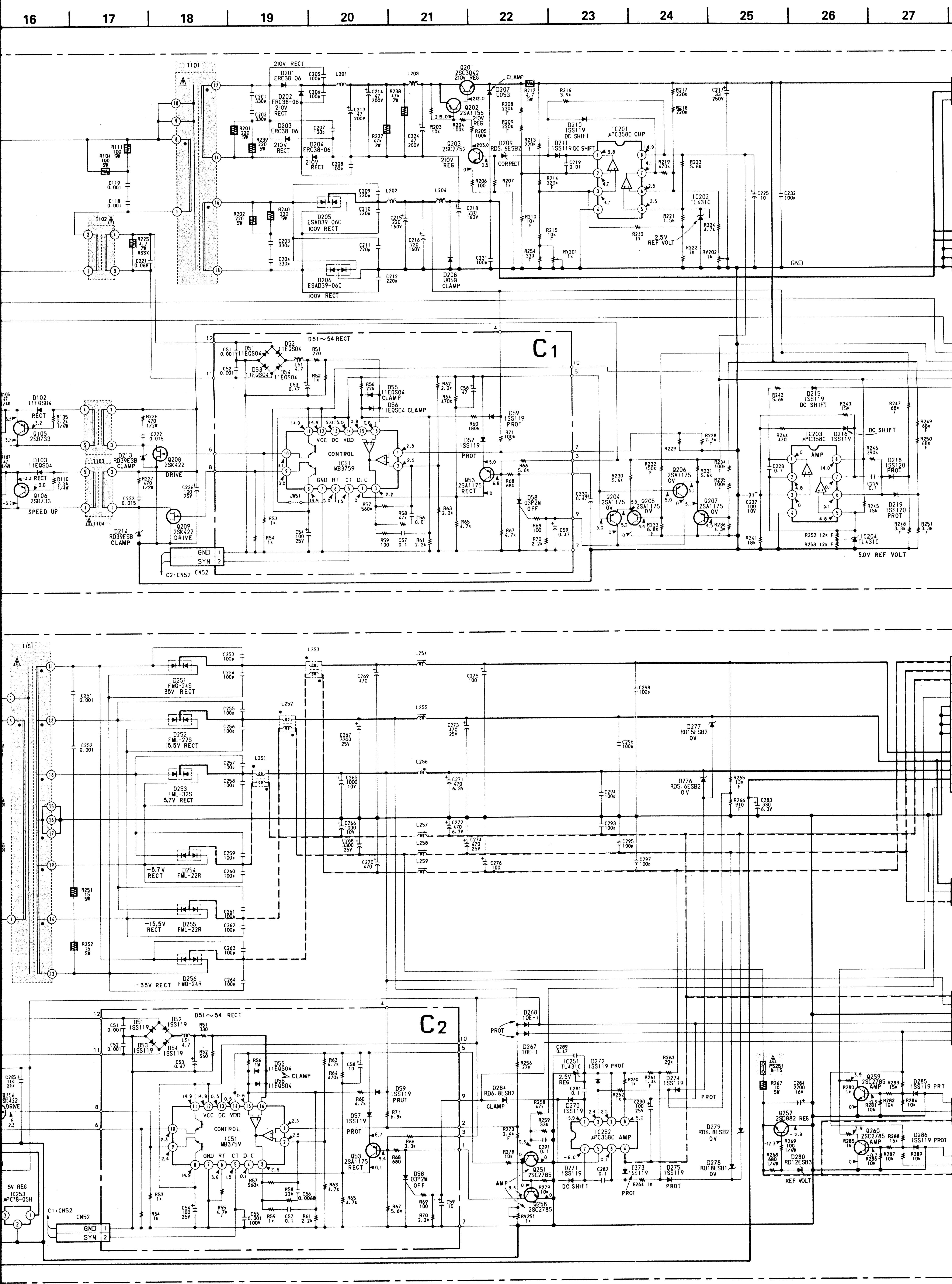


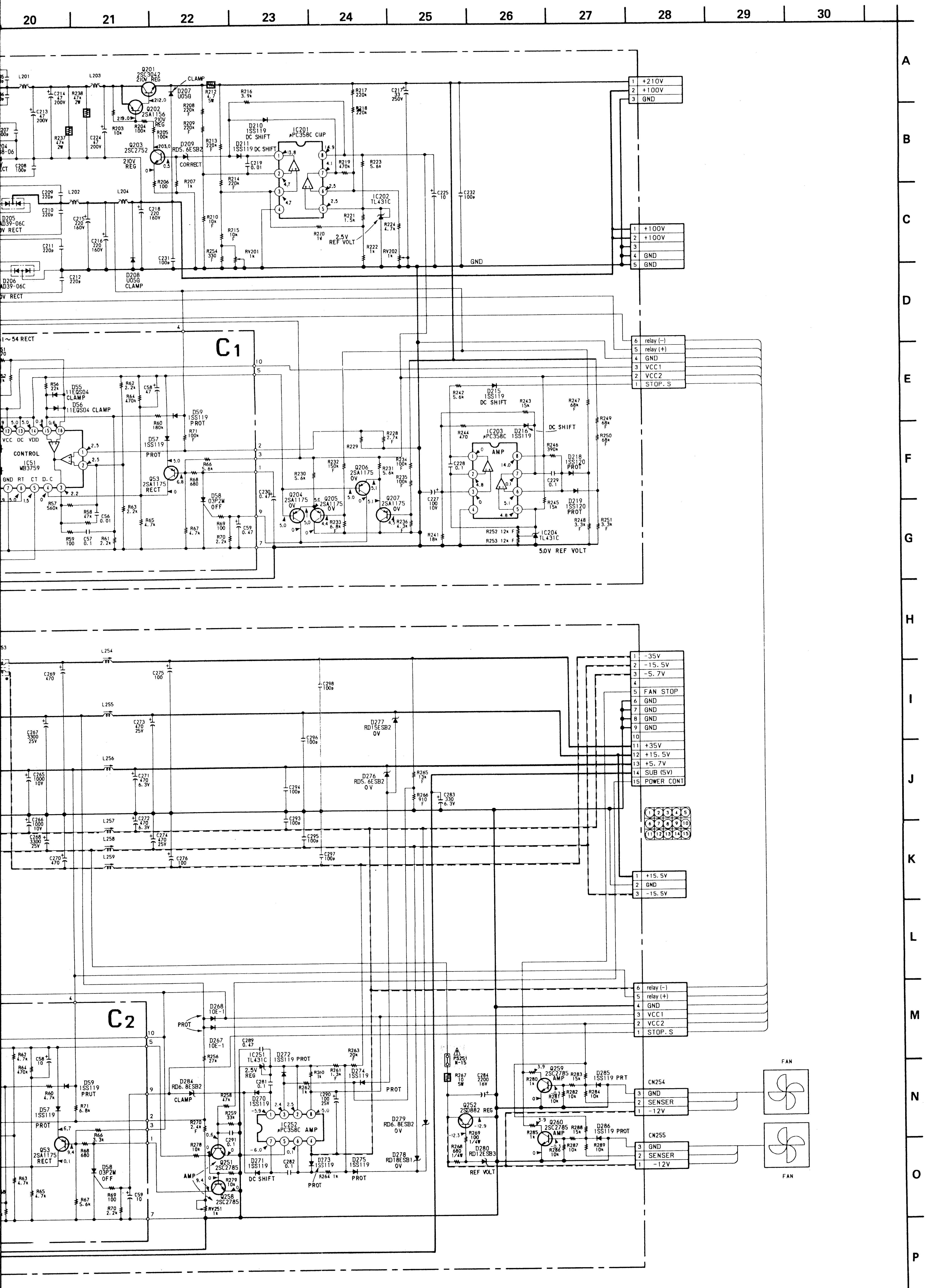
	Ref.	Part	Function
M2	IC251	TL431C	2.5V REF
	252	μ PC358C	AMP
	253	μ PC78-05H	5V REG
	Q151	2SK827	CONV
	152	2SK827	CONV
	153	2SB733	SPEED UP
	154	2SB733	SPEED UP
	155	2SC3150	CONV
	156	2SC2785	OC
	251	2SC2785	AMP
	252	2SD882	REG
	253	2SC2785	AMP
	254	2SB734	REG
	255	2SC2785	AMP
	256	2SK422	DRIVE
	257	2SK422	DRIVE
	258	2SC2785	AMP
	259	2SC2785	AMP
	260	2SC2785	AMP
	D151	11EQS04	CLAMP
	152	11EQS04	CLAMP
	153	ERB43-08	CLAMP
	154	1SS120	PROT
	155	1SS120	PROT
	156	RD5.6ESB2	REF VOLT
	158	1SS120	RECT
	159	1SS120	RECT
	251	FMG-24S	35V RECT
	252	FML-22S	15.5V RECT
	253	FML-32S	5.7V RECT
	254	FML-22R	− 5.7V RECT
	255	FML-22R	− 15.5V RECT
	256	FMG-24R	− 35V RECT
	265	RD39ESB	CLAMP
	266	RD39ESB	CLAMP
	267	10E-1	PROT
	268	10E-1	PROT
	270	1SS119	DC SHIFT
	271	1SS119	DC SHIFT
	272	1SS119	PROT
	273	1SS119	PROT
	274	1SS119	PROT
	275	1SS119	PROT
	276	RD5.6ESB2	OV
	277	RD15ESB2	OV
	278	RD18ESB1	OV
	279	RD6.8ESB2	OV
	280	RD12ESB2	REF VOLT
	281	AU02A	RECT
	282	11EQS04	PROT
	283	RD5.1ESB1	DC SHIFT
	284	RD6.8ESB2	CLAMP
	285	1SS119	PROT
	286	1SS119	PROT


M1 (POWER SUPPLY)
M2 (POWER SUPPLY)
M3B
200Vp-p(H)


12
13
14
15
16
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18
19
20
21
22
M1 (POWER SUPPLY)
C1
C2
200Vp-p(H)
T101
T151
CONTROL
IC51
MB3759

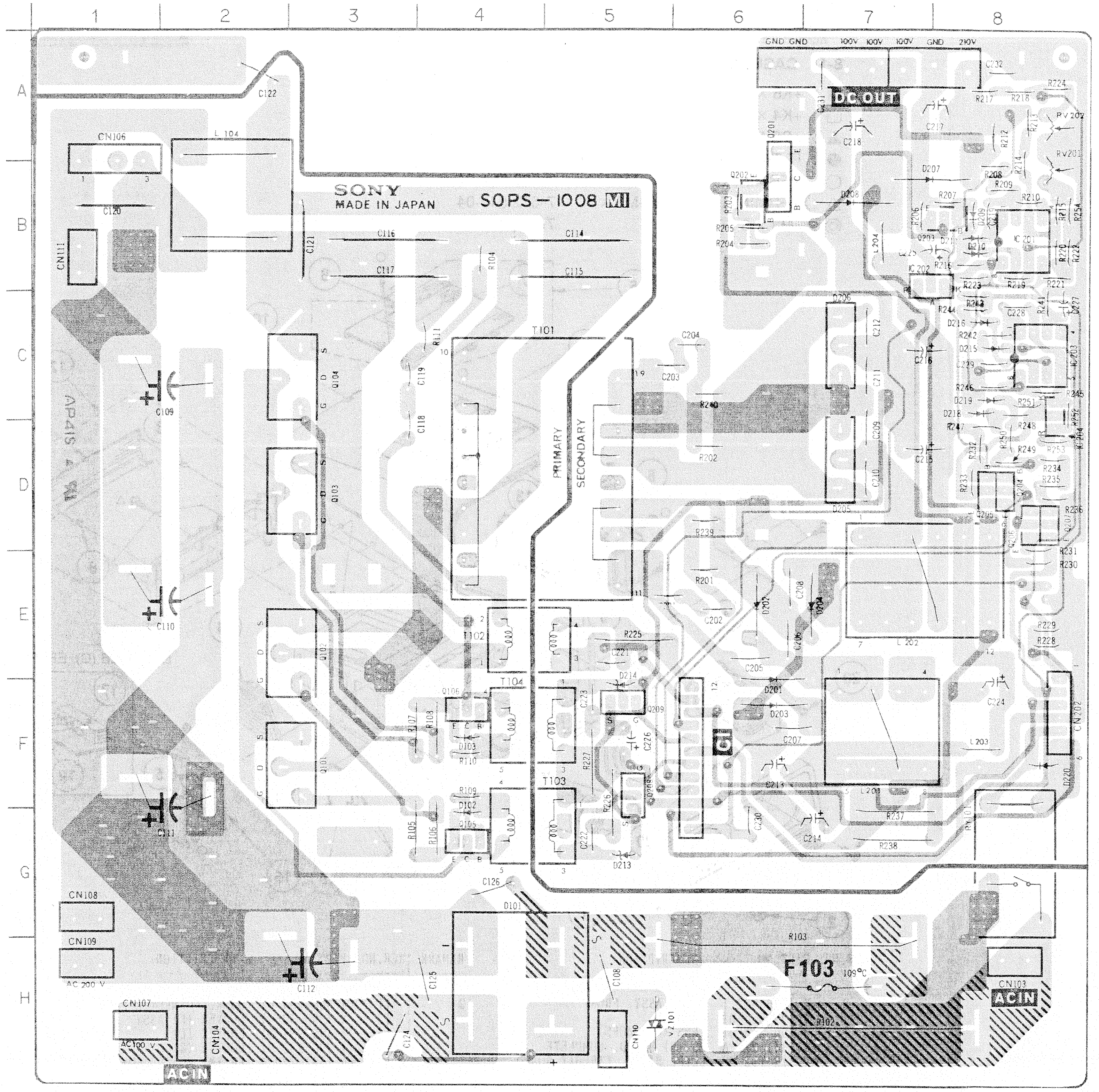

M1 (POWER SUPPLY)
M2 (POWER SUPPLY)
M3B
T101
T102
T103
T104
T151
T152
T153
T154
T155
T901
T601
T602
RY101
D220 1SS119 PROT
D101 S15VB60 AC RECT
CN103
CN104
CN110
CN111
CN107
CN108
CN109
CN106
DC (+)
NC
DC (0V)
CN151
Q101 2SK827 CONV
Q102 2SK827 CONV
Q103 2SK827 CONV
Q104 2SK827 CONV
Q105 2SB733
Q106 2SB733
SPEED UP
Q208 2SK422 DRIVE
Q209 2SK422 DRIVE
D213 RD39ESB CLAMP
D214 RD39ESB CLAMP
GND
SYN
C2:CN52
CN52
200Vp-p(H)
D251 FMG-24S 35V RECT
D252 FML-22S 15.5V RECT
D253 FML-32S 5.7V RECT
-5.7V RECT D254 FML-22R
-15.5V RECT D255 FML-22R
-35V RECT D256 FMG-24R
Q151 2SK827 CONV
Q152 2SK827 CONV
Q153 2SB733
Q154 2SB733
D151 11EQS04
D152 11EQS04 CLAMP
D265 RD39ESB1 CLAMP
D266 RD39ESB1 CLAMP
Q256 2SK422 DRIVE
Q257 2SK422
D281 AU02A
D282 11EQS04
Q254 2SB734 REG
Q255 2SC2785 AMP
Q253 2SC2785 AMP
5V REG IC253 μPC78-05H
DC SHIFT D283 RD5.1ESB1
Q155 2SC3150 CONV
Q156 2SC2785 OC
D153 ERB43-08 CLAMP
D154 1SS120
D155 1SS120 PROT
D156 5.6ESB2 REF VOLT
D158 1SS120
D159 1SS120 RECT
PS151 N-10
C1:CN52
D51~54 RECT
IC51 MB3759
CONTROL
VCC DC VDD
GND RT CT D.C


16
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18
19
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21
22
23
24
25
26
27
T101
T102
T104
T151
C1
C2
D51～54 RECT
CONTROL
IC51
MB3759
IC201
μPC358C CMP
IC202
TL431C
IC203
μPC358C
AMP
IC204
TL431C
5.0V REF VOLT
2.5V REF VOLT
GND
SYN
CN52
C2:CN52
C1:CN52
SPEED UP
DRIVE
CLAMP
PROT
RECT
DC SHIFT
CORRECT
210V RECT
210V REG
100V RECT
35V RECT
15.5V RECT
5.7V RECT
-5.7V RECT
-15.5V RECT
-35V RECT
5V REG
IC253
μPC78-05H
IC251
TL431C
IC252
μPC358C AMP
REF VOLT


20
21
22
23
24
25
26
27
28
29
30
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
C1
C2
+210V
+100V
GND
relay (−)
relay (+)
VCC1
VCC2
STOP. S
−35V
−15.5V
−5.7V
FAN STOP
+35V
+15.5V
+5.7V
SUB (5V)
POWER CONT
CN254
CN255
SENSER
−12V
FAN
IC201 μPC358C CMP
IC202 TL431C
IC203 μPC358C
IC204 TL431C
IC251 TL431C
IC252 μPC358C AMP
IC51 MB3759
CONTROL
2.5V REF VOLT
5.0V REF VOLT
DC SHIFT
PROT
CLAMP
CORRECT
REF VOLT

M1 [POWER SUPPLY] **M2** [POWER SUPPLY]

– M1 Board –



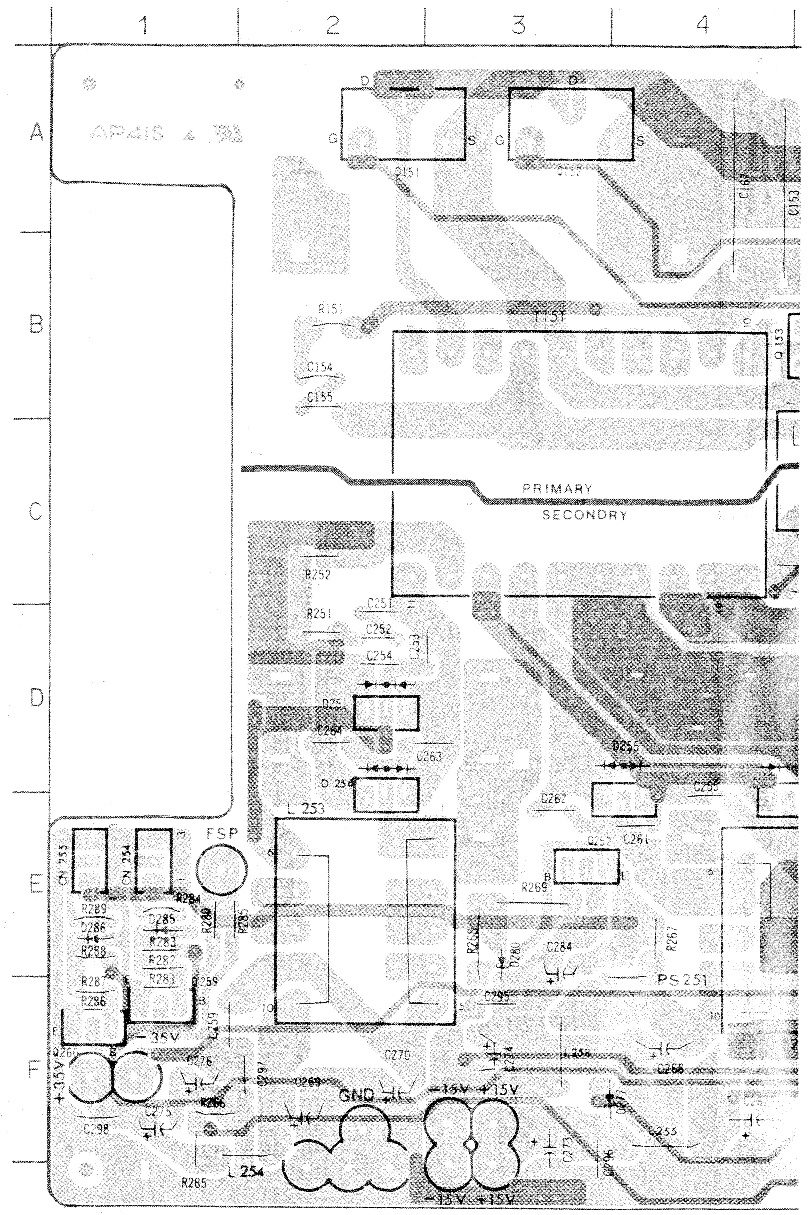
M1 BOARD

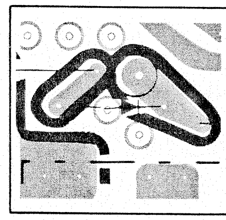
IC	
IC201	B – 8
IC202	B – 7
IC203	C – 8
IC204	C – 8

TRANSISTOR	
Q101	F – 3
Q102	E – 3
Q103	D – 3
Q104	C – 3
Q105	G – 4
Q106	F – 4
Q201	B – 6
Q202	B – 6
Q203	B – 8
Q204	D – 8
Q205	D – 8
Q206	D – 8
Q207	D – 8
Q208	F – 5
Q209	F – 5

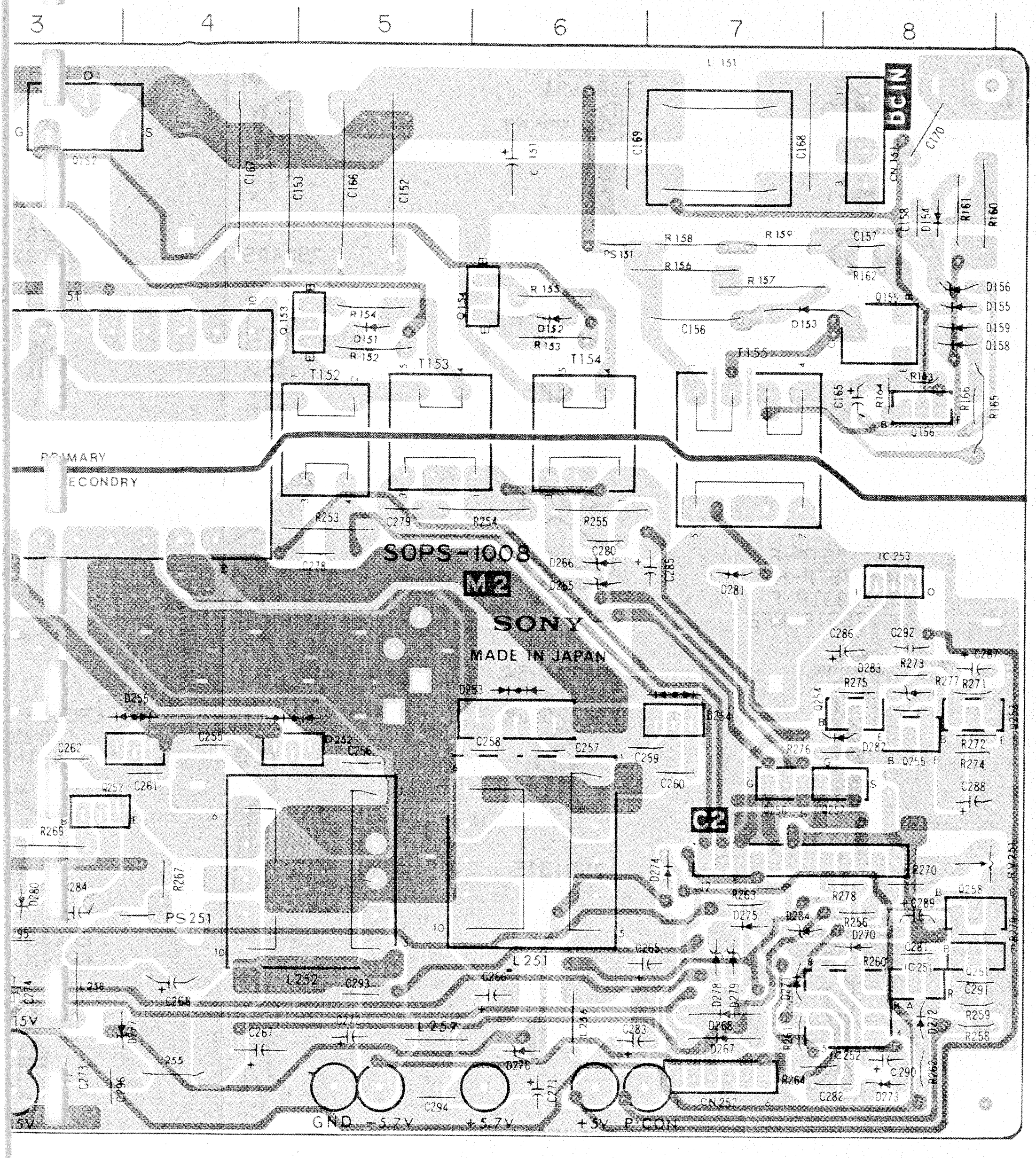
DIODE	
D101	H – 4
D102	G – 4
D103	F – 4
D201	F – 6
D202	E – 6
D203	F – 6
D204	E – 7
D205	D – 7
D206	C – 7
D207	B – 7
D208	B – 7
D209	B – 8
D210	B – 8
D211	B – 8
D213	G – 5
D214	F – 5
D215	C – 8
D216	C – 8
D218	C – 8
D219	C – 8
D220	F – 8

– M2 Board –





NOTE: The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.



M2 BOARD

IC	
IC251	F-8
IC252	F-8
IC253	D-8

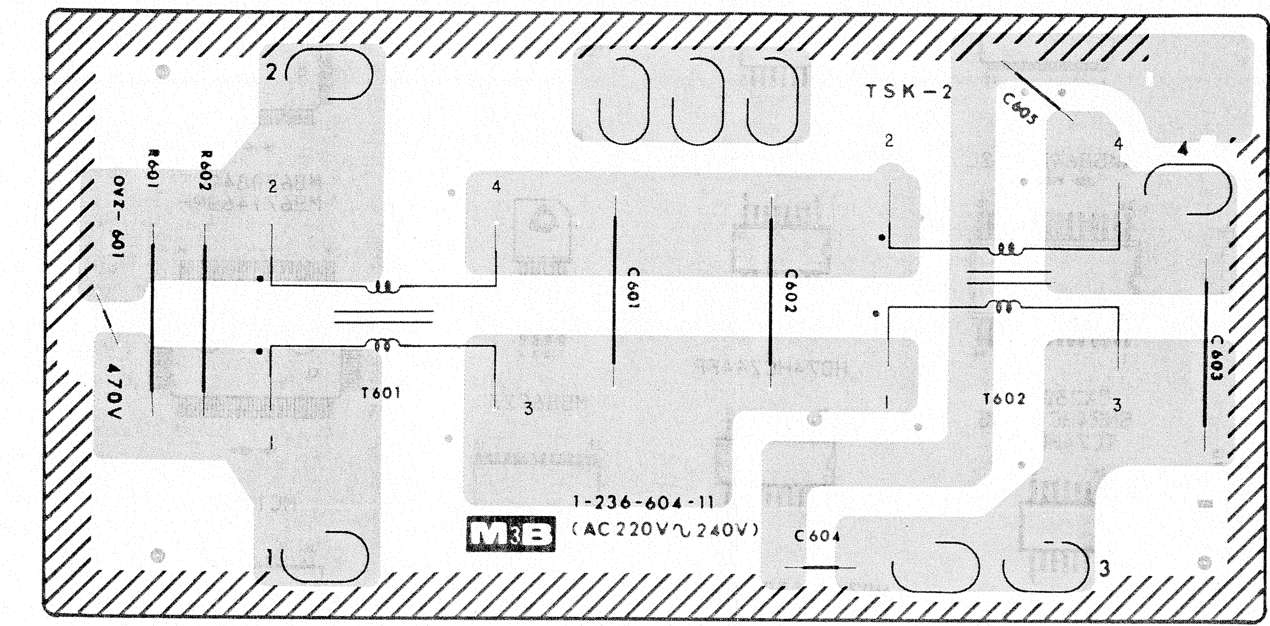
TRANSISTOR	
Q151	A-2
Q152	A-3
Q153	B-5
Q154	B-6
Q155	B-8
Q156	C-8
Q251	F-8
Q252	E-3
Q253	D-8
Q254	D-8
Q255	D-8
Q256	E-7
Q257	E-8
Q258	E-8
Q259	F-1
Q260	F-1

DIODE	
D151	B-5
D152	B-6
D153	B-7
D154	A-8
D155	B-8
D156	B-8
D158	B-8
D159	B-8
D251	D-2
D252	E-4
D253	D-6
D254	D-7
D255	E-4
D256	E-2
D265	D-6
D266	C-6
D267	F-7
D268	F-7
D270	F-8
D271	F-7
D272	F-8
D273	F-8
D274	E-7
D275	F-7
D276	F-6
D277	F-4
D278	F-7
D279	F-7
D280	E-3
D281	D-7
D282	D-8
D283	D-8
D284	F-7
D285	E-1
D286	E-1

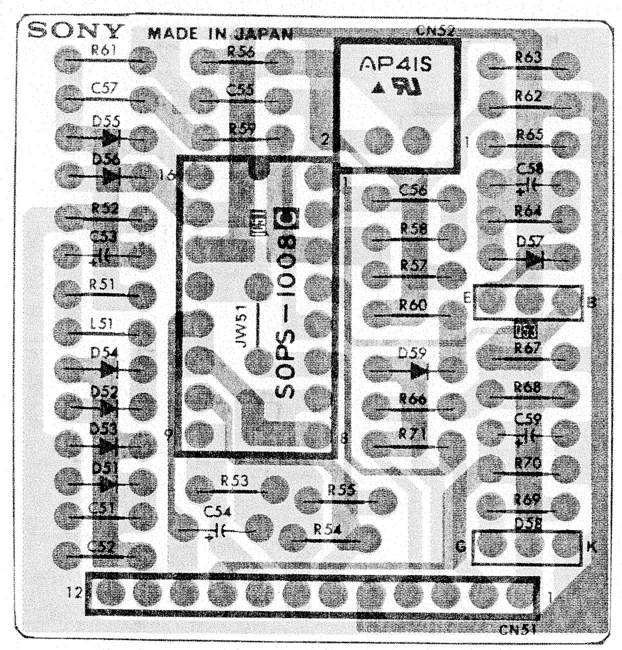
VARIABLE RESISTOR	
RV251	E-8

M3B [LINE FILTER] **C1** **C2**

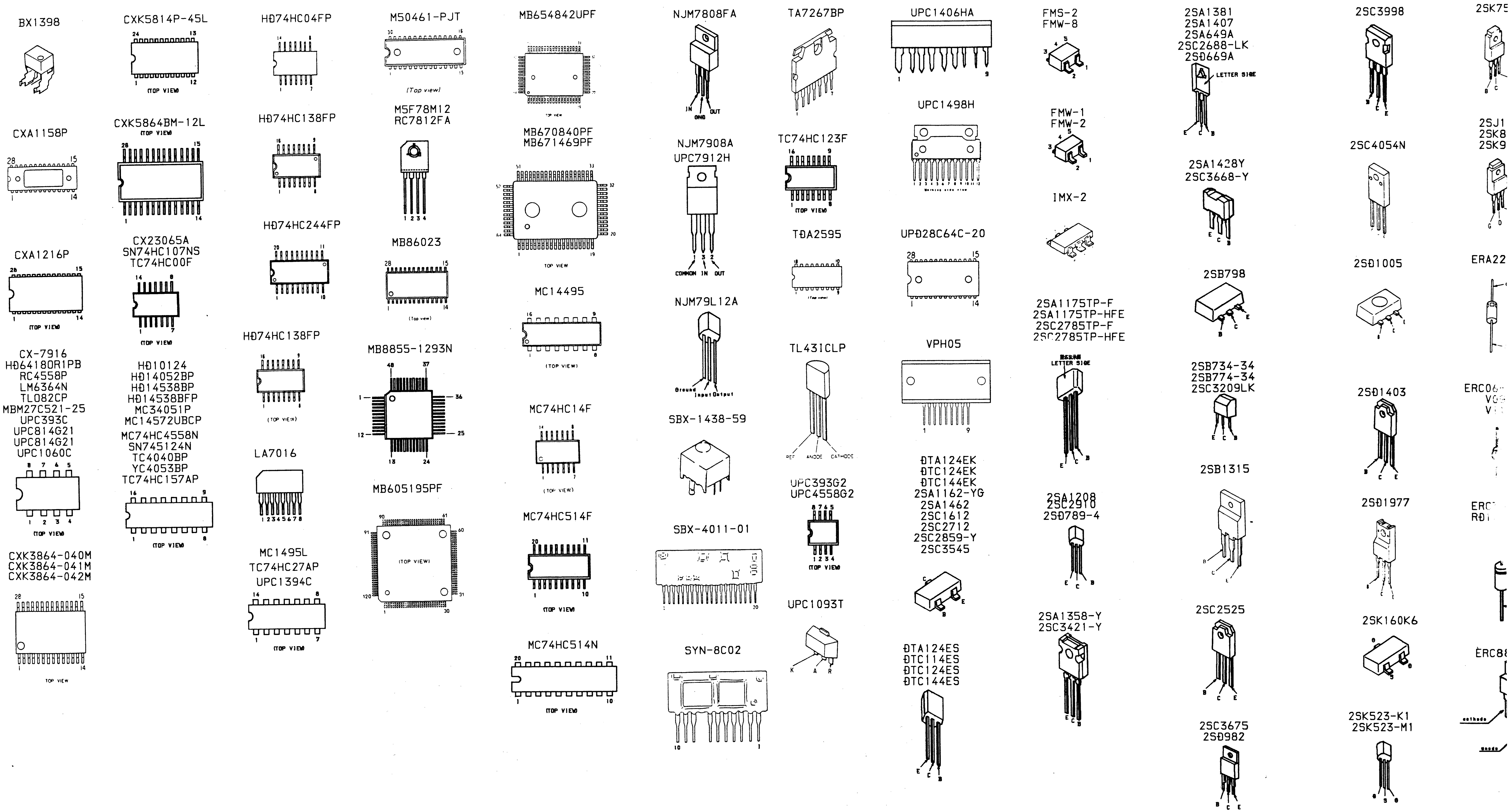
– M3B Board –

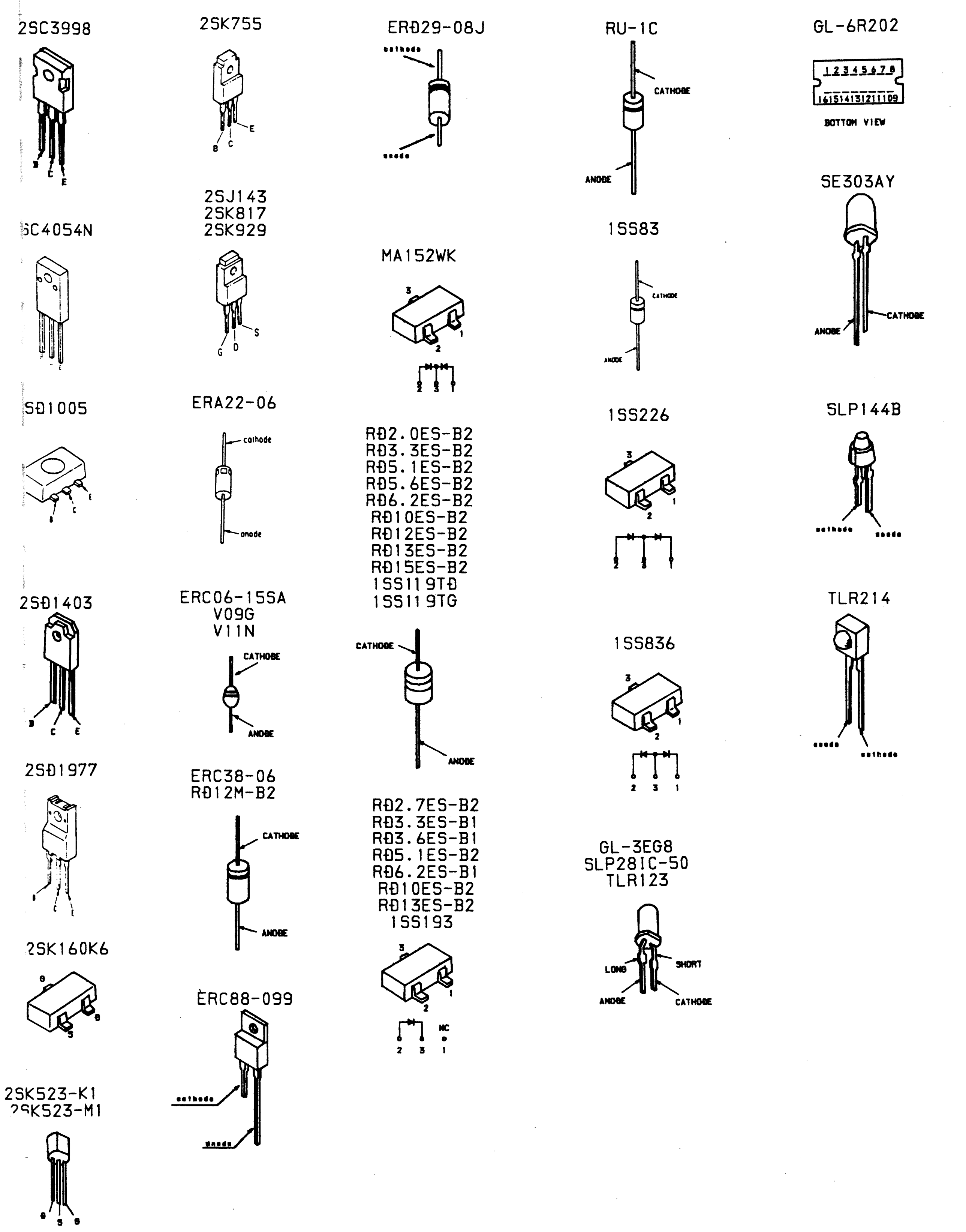


– C1,C2 Board –



7-5, SEMICONDUCTORS





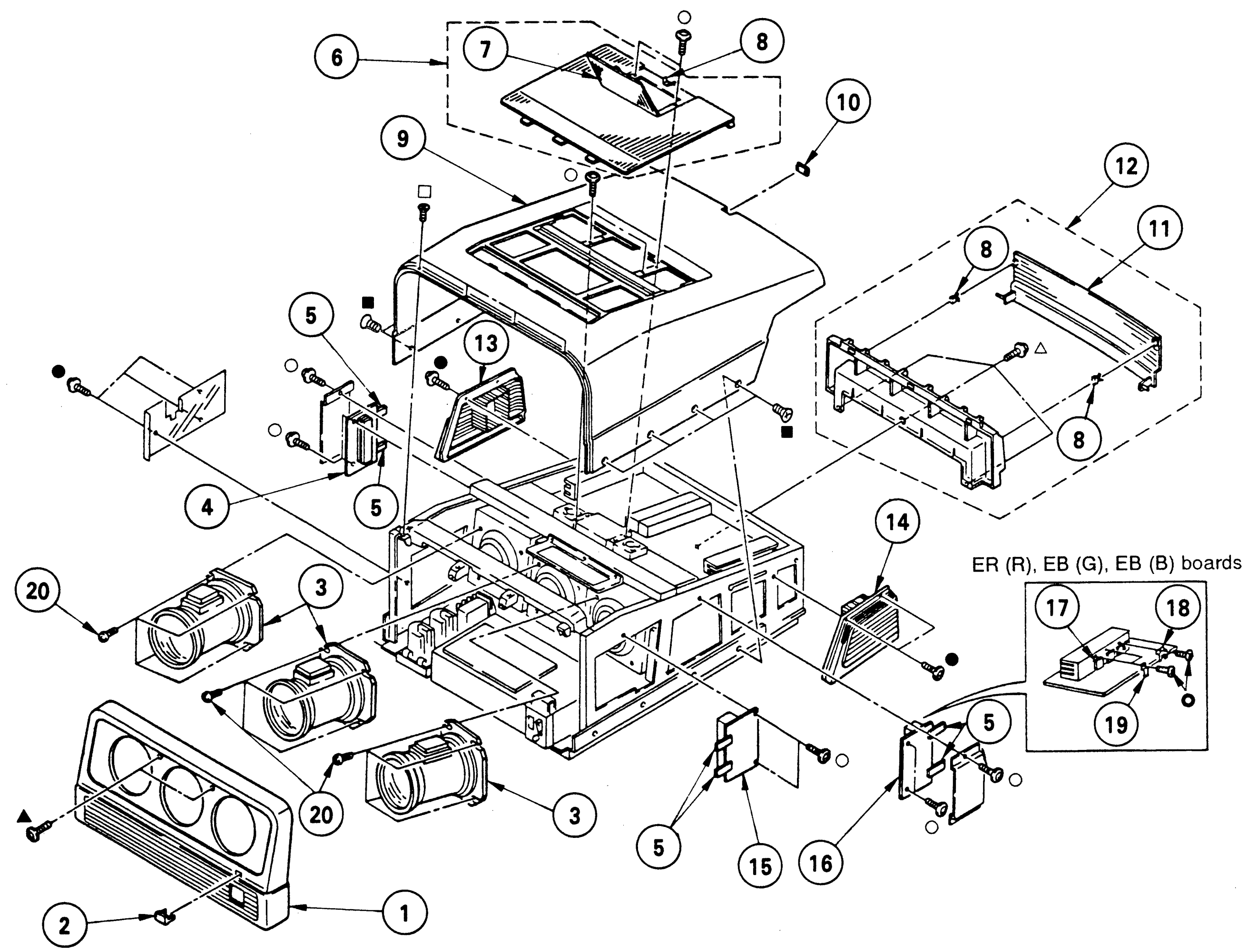
SECTION 8
EXPLODED VIEWS

NOTE:
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " ★ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

8-1. CASE, LENS

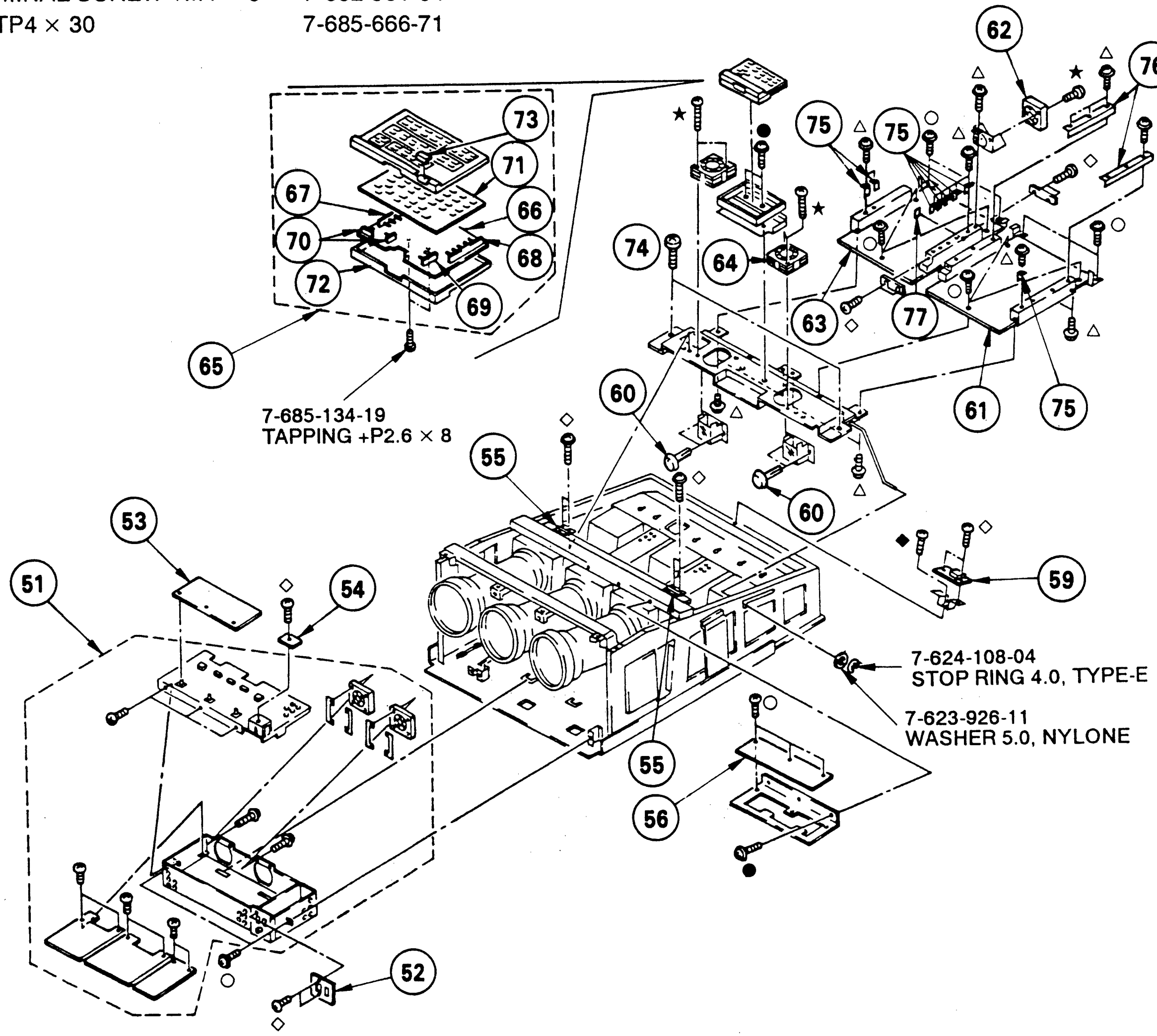
■ :	+K6 × 12	7-682-288-09
□ :	+K4 × 8	7-682-261-09
▲ :	+PSW4 × 14	7-682-663-09
● :	IT TAPPING SCREW +M4 × 16	7-685-663-79
○:	TERMINAL SCREW +M4 × 8	7-682-561-04
△ :	TERMINAL SCREW +M3 × 10	7-682-549-04
◎ :	+P3 × 8	7-682-548-04



REF.NO.	PART NO.	DESCRIPTION	REMARK
1	X-4395-522-1	PANEL ASSY, FRONT	2
2	4-395-534-01	FILTER	
3	4-396-248-01	LENS (HD-240FS)	
4	*A-1341-222-A	EB (B) BOARD, COMPLETE	
5	*4-313-732-00	CLIP, HINGE, CIRCUIT BOARD	
6	X-4395-523-1	PLATE ASSY, TOP	7,8
7	4-395-596-01	DOOR, CONTROL PANEL	
8	4-386-710-01	CATCHER, PUSH	
9	X-4395-524-1	HOOD ASSY	10
10	4-396-224-01	PLATE, INDICATE	
11	4-396-234-01	DOOR, CONNECTOR PANEL	
12	X-4395-525-1	LOUVER (C) ASSY	8
13	4-396-231-01	LOUVER (L)	
14	4-396-232-01	LOUVER (R)	
15	*A-1341-220-A	EB (R) BOARD, COMPLETE	
16	*A-1341-221-A	EB (G) BOARD, COMPLETE	
17	4-384-424-01	SHEET, SHIELD (B)	
18	*4-384-422-01	TR RETAINER (C)	
19	*4-396-261-01	TR HOLDER (E)	
20	2-350-305-11	SCREW	

8-2. CHASSIS 1

◆ : +BVTP3 × 12 7-685-646-79
◇ : +BVTP4 × 10 7-685-660-79
△ : TERMINAL SCREW +M4 × 16 7-685-599-04
● : IT TAPPING SCREW +M4 × 16 7-685-663-79
○ : TERMINAL SCREW +M4 × 8 7-682-561-04
★ : +BVTP4 × 30 7-685-666-71

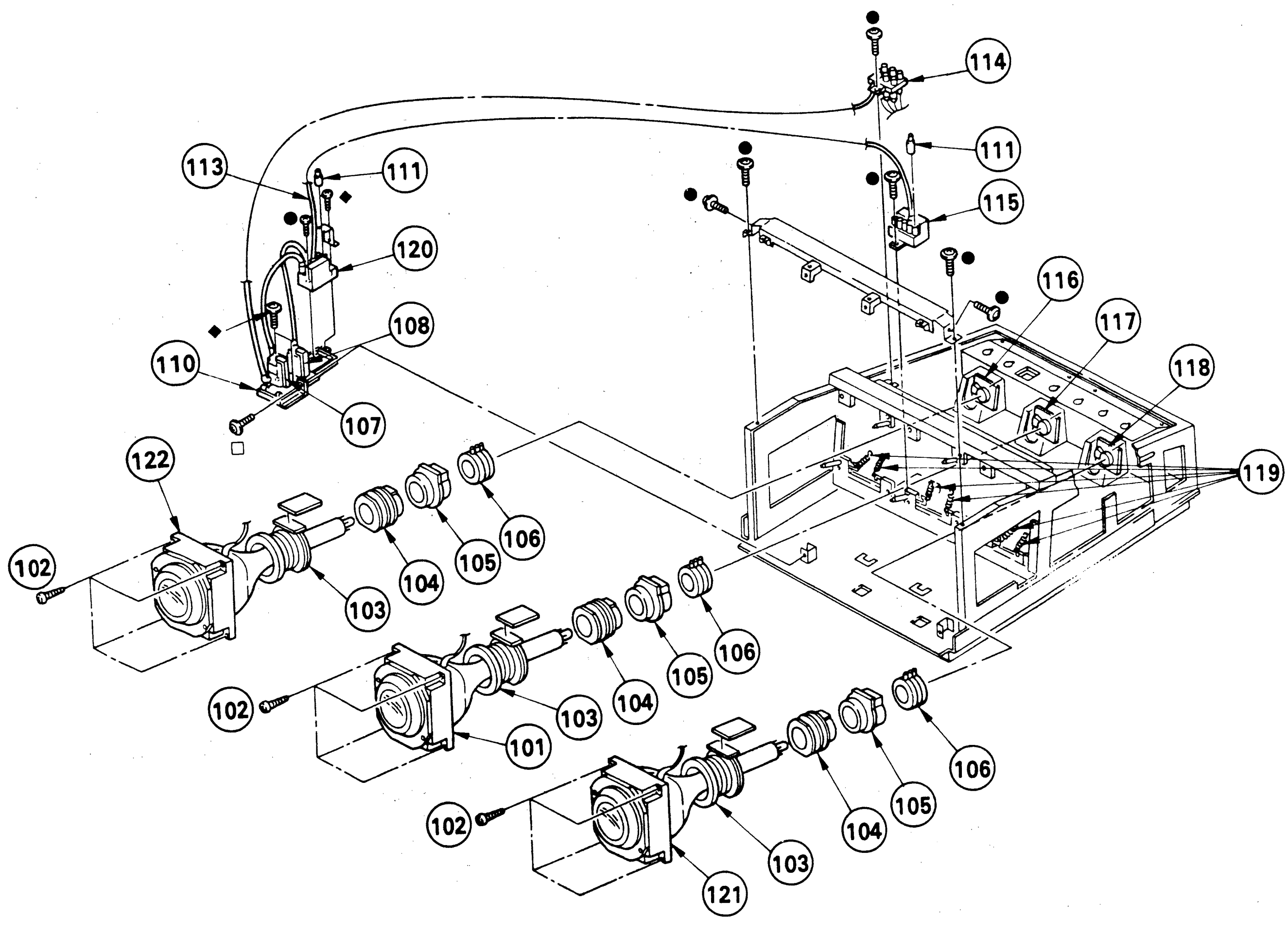


REF.NO.	PART NO.	DESCRIPTION	REMARK
51 ⚠	1-413-484-12	REGULATOR, SWITCHING (SOPS1008D)	
52	4-396-220-01	PLATE, POWER	
53	*A-1195-036-A	PA BOARD, COMPLETE	
54	*1-629-817-11	NB BOARD	
55	*3-658-816-00	HINGE, FRONT	
56	*1-629-809-11	L BOARD	
59	*1-629-816-11	NA BOARD	
60	4-374-303-01	RIVET, NYLON	
61	*A-1345-908-A	DC BOARD, COMPLETE	
62	1-541-702-11	FAN, DC	
63	*A-1345-907-A	E BOARD, COMPLETE	
64	1-541-703-11	FAN, DC	
65	A-1499-939-A	PANEL ASSY, CONTROL	66−73
66	*1-631-359-11	RC BOARD	
67	*1-631-356-11	RCA BOARD	
68	*1-631-357-11	RCB BOARD	
69	*1-631-358-11	RCC BOARD	
70	*1-631-493-11	RCD BOARD	
71	4-395-509-11	SHEET, RUBBER	
72	4-395-508-01	CASE, LOWER	
73	4-395-501-01	KEY TOP	
74	4-396-260-21	BOLT, SOCKET HEXAGON	
75	*4-395-528-01	HOLDER (C), TR	
76	*4-395-553-01	HOLDER (A), TR	
77	*4-393-406-01	SHEET (R), RADIATION	

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

8-3. PICTURE TUBE

□ :	+K4 × 8	7-682-261-09
◆ :	+BVTP3 × 12	7-685-646-79
● :	IT TAPPING SCREW +M4 × 16	7-685-663-79



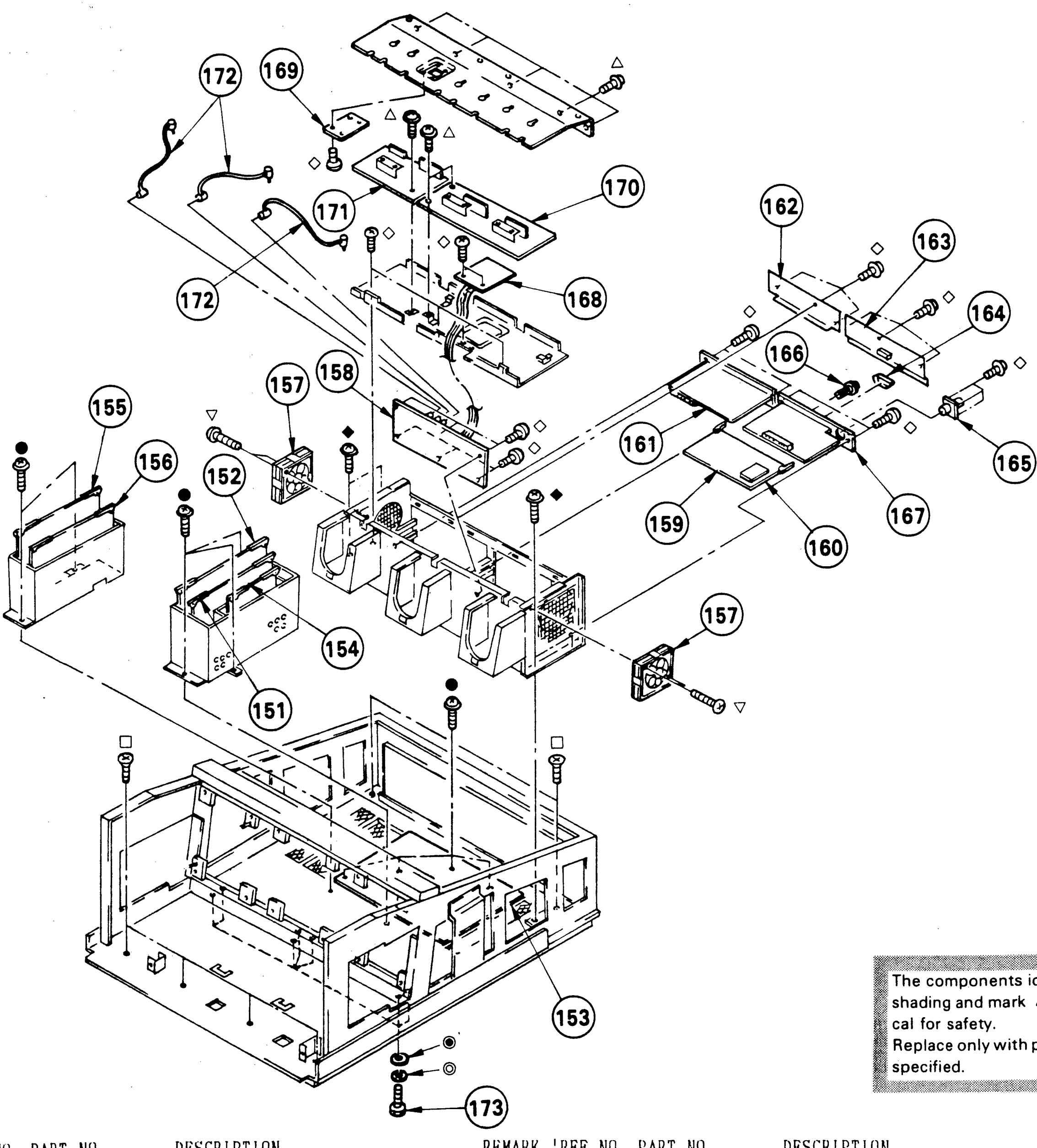
REF.NO.	PART NO.	DESCRIPTION	REMARK
101	⚠ .8-736-321-05	PICTURE TUBE (09MH(G))	
102	2-350-305-11	SCREW	
103	⚠ .1-451-355-12	DEFLECTION YOKE (Y636PJ)	
104	⚠ .1-452-487-31	NECK ASSY, PICTURE TUBE (NA363A)	
105	1-452-541-11	MAGNET ASSY, FOCUS	
106	⚠ .1-452-429-21	NECK ASSY, PICTURE TUBE (NA366)	
107	⚠ .1-439-466-11	TRANSFORMER ASSY, FLYBACK (NX-2500)	
108	⚠ .1-439-466-21	TRANSFORMER ASSY, FLYBACK (NX-2502)	

REF.NO.	PART NO.	DESCRIPTION	REMARK
110	*1-629-815-11	PB BOARD	
111	4-373-137-01	CAP (Z), RUBBER	
113	1-559-865-31	LEAD ASSY, HIGH-VOLTAGE	
114	⚠ .1-238-755-11	RESISTOR ASSY, HIGH-VOLTAGE	
115	⚠ .1-453-108-11	DC BLOCK, HIGH-VOLTAGE	
116	*1-629-828-11	CBB BOARD	
117	*1-629-827-11	CBG BOARD	
118	*1-629-826-11	CBR BOARD	
119	4-303-774-99	SPRING, GROUND	
120	⚠ .1-453-108-31	DC BLOCK, HIGH-VOLTAGE	
121	⚠.8-736-323-05	PICTURE TUBE (09MH (R))	
122	⚠.8-736-322-05	PICTURE TUBE (09MH (B))	

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

8-4. CHASSIS 2

Mark	Description	Part No.
◇	+BVTP3 × 8	7-685-646-79
◆	+BVTP4 × 10	7-685-660-79
▽	TERMINAL SCREW +M4 × 30	7-685-660-71
△	TERMINAL SCREW +M3 × 10	7-682-549-04
●	IT TAPPING SCREW +M4 × 16	7-685-663-79
□	+K4 × 8	7-682-261-09
◎	SW8	7-623-214-22
◎	W8, MIDDLE	7-688-007-12



The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION	REMARK
151	*A-1345-875-A	DA BOARD, COMPLETE	
152	*A-1345-906-A	DB BOARD, COMPLETE	
153	*1-629-830-11	DM BOARD	
154	*A-1394-215-A	Y BOARD, COMPLETE	
155	A-1341-218-A	DD BOARD, COMPLETE	
156	A-1341-219-A	DE BOARD, COMPLETE	
157	1-541-703-11	FAN, DC	
158	*1-629-818-11	BM BOARD	
159	*A-1135-587-A	BB BOARD, COMPLETE	
160	*A-1135-628-A	BA BOARD, COMPLETE	
161	A-1390-051-A	QHD BOARD, COMPLETE	
162	*4-395-558-01	PLATE (Z)	
163	*4-395-559-01	PLATE (B)	
164	*3-673-948-11	CAP, DUST	
165	1-575-092-11	CONNECTOR ASSY, MULTI 14P	
166	4-812-134-21	RIVET NYLON, 3.5	
167	4-395-583-11	PANEL (B), CONNECTOR	
168	*1-629-819-11	CF-1 BOARD	
169	*1-629-820-11	CF-2 BOARD	
170	*A-1335-015-A	CA (RG) BOARD, COMPLETE	
171	*A-1335-014-A	CA (B) BOARD, COMPLETE	
172	*1-555-110-00	CABLE, P-P	
173	4-396-260-11	BOLT, SOCKET HEXAGON	

SECTION 9
ELECTRICAL PARTS LIST

NOTE:

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

RESISTORS
- All resistors are in ohms
- F : nonflammable

When indicating parts by reference number, please include the board name.

CAPACITORS
- MF : μF, PF : μμF

COILS
- MMH : mH, UH : μH

- The components identified by ☒ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.
- ✱ : Selected to yield optimum performance.
- There are some cases the reference number on one board overlaps on the other board. Therefore, when ordering parts by the reference number, please include the board name.

REF.NO.	PART NO.	DESCRIPTION			REMARK
	*1-629-818-11	BM BOARD ********			
	*1-564-509-11	PLUG, CONNECTOR 6P			
	*1-564-515-11	PLUG, CONNECTOR 12P			
	*1-568-979-11	CONNECTOR 30P			
	*1-568-981-11	CONNECTOR, MALE 64P			
	*1-568-985-11	CONNECTOR, FEMALE 64P			
		<CONNECTOR>			
BM1	*1-568-984-11	CONNECTOR, MALE 96P			
BM3	*1-568-982-11	CONNECTOR, FEMALE 96P			
BM4	*1-568-982-11	CONNECTOR, FEMALE 96P			
		<JACK>			
J1	*1-526-575-00	SOCKET, PLUG 1P			
J2	*1-526-575-00	SOCKET, PLUG 1P			
J3	*1-526-575-00	SOCKET, PLUG 1P			
J4	*1-526-575-00	SOCKET, PLUG 1P			
J5	*1-526-575-00	SOCKET, PLUG 1P			
J6	*1-526-575-00	SOCKET, PLUG 1P			
******************************					
	*A-1135-628-A	BA BOARD, COMPLETE ******************			
	*1-568-984-11	CONNECTOR, MALE 96P			
	4-309-378-00	WASHER			
		<FILTER>			
BPF001	1-236-366-11	MODULE, TRAP			
BPF002	1-236-365-11	MODULE, TRAP			
BPF003	1-236-063-11	MODULE, B.P.F			
		<CAPACITOR>			
C001	1-124-477-11	ELECT	47MF	20%	16V
C002	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C003	1-126-233-11	ELECT	22MF	20%	50V
C004	1-126-233-11	ELECT	22MF	20%	50V
C005	1-126-233-11	ELECT	22MF	20%	50V
C006	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C007	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C008	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C009	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C010	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C011	1-126-101-11	ELECT	100MF	20%	16V
C012	1-123-875-11	ELECT	10MF	20%	50V
C013	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C014	1-126-233-11	ELECT	22MF	20%	50V
C015	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C016	1-126-233-11	ELECT	22MF	20%	50V
C017	1-126-101-11	ELECT	100MF	20%	16V
C018	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C019	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C020	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C021	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C022	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C023	1-163-088-00	CERAMIC CHIP	5PF	0.25PF	50V
C024	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V
C027	1-123-875-11	ELECT	10MF	20%	50V
C030	1-163-213-00	CERAMIC CHIP	0.0022MF	10%	50V
C101	1-124-119-00	ELECT	330MF	20%	16V
C102	1-124-119-00	ELECT	330MF	20%	16V
C103	1-163-111-00	CERAMIC CHIP	56PF	5%	50V
C104	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C105	1-136-153-00	FILM	0.01MF	5%	50V
C106	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C107	1-163-119-00	CERAMIC CHIP	120PF	5%	50V
C108	1-163-241-11	CERAMIC CHIP	39PF	5%	50V
C109	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C110	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C111	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C112	1-163-119-00	CERAMIC CHIP	120PF	5%	50V
C113	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C114	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C115	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C116	1-124-791-11	ELECT	1MF	20%	50V
C117	1-124-791-11	ELECT	1MF	20%	50V
C118	1-136-173-00	FILM	0.47MF	5%	50V
C119	1-136-161-00	FILM	0.047MF	5%	50V
C120	1-136-157-00	FILM	0.022MF	5%	50V
C121	1-136-157-00	FILM	0.022MF	5%	50V
C122	1-163-119-00	CERAMIC CHIP	120PF	5%	50V
C123	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C124	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C201	1-124-477-11	ELECT	47MF	20%	16V
C202	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C203	1-126-233-11	ELECT	22MF	20%	50V
C204	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C205	1-126-233-11	ELECT	22MF	20%	50V
C206	1-136-169-00	FILM	0.22MF	5%	50V
C207	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C208	1-124-902-00	ELECT	0.47MF	20%	50V
C209	1-124-902-00	ELECT	0.47MF	20%	50V
C210	1-124-902-00	ELECT	0.47MF	20%	50V
C214	1-126-233-11	ELECT	22MF	20%	50V
C215	1-124-477-11	ELECT	47MF	20%	16V
C216	1-124-464-11	ELECT	0.22MF	20%	50V
C217	1-124-464-11	ELECT	0.22MF	20%	50V
C218	1-124-477-11	ELECT	47MF	20%	16V

REF.NO.	PART NO.	DESCRIPTION			REMARK
C219	1-136-157-00	FILM	0.022MF	5%	50V
C220	1-130-471-00	MYLAR	0.001MF	5%	50V
C221	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C222	1-136-169-00	FILM	0.22MF	5%	50V
C223	1-136-153-00	FILM	0.01MF	5%	50V
C224	1-124-463-00	ELECT	0.1MF	20%	50V
C225	1-130-479-00	MYLAR	0.0047MF	5%	50V
C226	1-124-791-11	ELECT	1MF	20%	50V
C227	1-136-153-00	FILM	0.01MF	5%	50V
C228	1-124-927-11	ELECT	4.7MF	20%	50V
C229	1-124-927-11	ELECT	4.7MF	20%	50V
C230	1-130-477-00	MYLAR	0.0033MF	5%	50V
C231	1-130-481-00	MYLAR	0.0068MF	5%	50V
C232	1-130-476-00	MYLAR	0.0027MF	5%	50V
C233	1-136-161-00	FILM	0.047MF	5%	50V
C234	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C235	1-124-925-11	ELECT	2.2MF	20%	50V
C236	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C237	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C238	1-124-925-11	ELECT	2.2MF	20%	50V
C239	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C240	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C241	1-124-925-11	ELECT	2.2MF	20%	50V
C242	1-124-925-11	ELECT	2.2MF	20%	50V
C243	1-124-925-11	ELECT	2.2MF	20%	50V
C244	1-123-875-11	ELECT	10MF	20%	50V
C245	1-123-875-11	ELECT	10MF	20%	50V
C246	1-123-875-11	ELECT	10MF	20%	50V
C247	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C249	1-126-101-11	ELECT	100MF	20%	16V
C250	1-124-120-11	ELECT	220MF	20%	16V
C251	1-126-101-11	ELECT	100MF	20%	16V
C252	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C254	1-126-101-11	ELECT	100MF	20%	16V
C255	1-123-875-11	ELECT	10MF	20%	50V
C257	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C259	1-124-464-11	ELECT	0.22MF	20%	50V
C260	1-124-477-11	ELECT	47MF	20%	16V
C261	1-124-925-11	ELECT	2.2MF	20%	50V
C262	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C265	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C349	1-126-233-11	ELECT	22MF	20%	50V
C350	1-123-875-11	ELECT	10MF	20%	50V
C351	1-136-169-00	FILM	0.22MF	5%	50V
C352	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C353	1-123-875-11	ELECT	10MF	20%	50V
C354	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V

<COM FILTER BLOCK>

REF.NO.	PART NO.	DESCRIPTION
CM001	1-466-162-22	BLOCK, COM FILTER (CFB-4)

<TRIMMER>

REF.NO.	PART NO.	DESCRIPTION
CT101	1-141-181-11	CAP,TRIMMER
CT102	1-141-181-11	CAP,TRIMMER

<DIODE>

REF.NO.	PART NO.	DESCRIPTION
D004	8-719-400-18	DIODE MA152WK
D006	8-719-105-82	DIODE RD5.1M-B2
D010	8-719-105-99	DIODE RD6.2M-B1
D101	8-719-400-18	DIODE MA152WK
D102	8-719-400-18	DIODE MA152WK
D103	8-719-400-18	DIODE MA152WK
D201	8-719-900-95	DIODE V09G
D202	8-719-104-34	DIODE 1S2836
D203	8-719-104-34	DIODE 1S2836
D204	8-719-400-18	DIODE MA152WK
D206	8-719-400-18	DIODE MA152WK
D207	8-719-400-18	DIODE MA152WK
D208	8-719-105-45	DIODE RD3.3M-B1
D209	8-719-105-45	DIODE RD3.3M-B1
D210	8-719-400-18	DIODE MA152WK

<DELAY LINE>

REF.NO.	PART NO.	DESCRIPTION
DL001	1-415-632-11	DELAY LINE, Y
DL101	1-415-122-31	DELAY LINE, 1H (PAL)

<IC>

REF.NO.	PART NO.	DESCRIPTION
IC001	8-759-340-52	IC HD14052BP
IC002	8-759-947-20	IC TDA4555-V8
IC003	8-752-034-85	IC CXA1216P
IC004	8-759-946-99	IC TDA2595-V7
IC005	8-759-040-53	IC MC14053BCP
IC006	8-759-232-64	IC TC74HC157AP
IC007	8-759-232-21	IC TC74HC27AP
IC008	8-759-604-39	IC M5F78M12
IC009	8-759-979-16	IC CX-7916
IC010	1-808-891-11	MODULE (SNY-9202)
IC012	8-759-945-58	IC RC4558P

<COIL>

REF.NO.	PART NO.	DESCRIPTION	
L001	1-410-478-11	INDUCTOR	47UH
L101	1-404-584-11	COIL	
L102	1-404-554-11	COIL	
L103	1-404-539-11	COIL	
L104	1-404-554-11	COIL	
L105	1-404-554-11	COIL	
L106	1-410-466-41	INDUCTOR	4.7UH
L107	1-408-406-00	INDUCTOR	5.6UH
L108	1-410-478-11	INDUCTOR	47UH
L109	1-410-209-51	INDUCTOR CHIP	27UH
L201	1-459-155-00	COIL (WITH CORE)	45UH
L202	1-459-155-00	COIL (WITH CORE)	45UH

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION
Q001	8-729-271-23	TRANSISTOR 2SC2712
Q002	8-729-230-46	TRANSISTOR 2SA1162-YG
Q003	8-729-271-23	TRANSISTOR 2SC2712
Q004	8-729-271-23	TRANSISTOR 2SC2712
Q005	8-729-271-23	TRANSISTOR 2SC2712
Q006	8-729-271-23	TRANSISTOR 2SC2712
Q007	8-729-271-23	TRANSISTOR 2SC2712
Q008	8-729-271-23	TRANSISTOR 2SC2712
Q009	8-729-271-23	TRANSISTOR 2SC2712
Q010	8-729-271-23	TRANSISTOR 2SC2712
Q012	8-729-901-01	TRANSISTOR DTC144EK
Q013	8-729-901-01	TRANSISTOR DTC144EK
Q014	8-729-271-23	TRANSISTOR 2SC2712
Q015	8-729-271-23	TRANSISTOR 2SC2712
Q016	8-729-901-01	TRANSISTOR DTC144EK

BA

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q017	8-729-901-01	TRANSISTOR DTC144EK	
Q018	8-729-900-53	TRANSISTOR DTC114EK	
Q019	8-729-900-53	TRANSISTOR DTC114EK	
Q101	8-729-901-01	TRANSISTOR DTC144EK	
Q102	8-729-271-23	TRANSISTOR 2SC2712	
Q103	8-729-901-01	TRANSISTOR DTC144EK	
Q104	8-729-901-01	TRANSISTOR DTC144EK	
Q106	8-729-901-01	TRANSISTOR DTC144EK	
Q107	8-729-901-01	TRANSISTOR DTC144EK	
Q108	8-729-901-01	TRANSISTOR DTC144EK	
Q201	8-729-140-96	TRANSISTOR 2SD774-34	
Q202	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q203	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q204	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q205	8-729-271-23	TRANSISTOR 2SC2712	
Q206	8-729-271-23	TRANSISTOR 2SC2712	
Q207	8-729-271-23	TRANSISTOR 2SC2712	
Q208	8-729-271-23	TRANSISTOR 2SC2712	
Q209	8-729-271-23	TRANSISTOR 2SC2712	
Q210	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q211	8-729-271-23	TRANSISTOR 2SC2712	
Q212	8-729-116-06	TRANSISTOR 2SK160-K6	
Q213	8-729-271-23	TRANSISTOR 2SC2712	
Q214	8-729-116-06	TRANSISTOR 2SK160-K6	
Q215	8-729-271-23	TRANSISTOR 2SC2712	
Q216	8-729-116-06	TRANSISTOR 2SK160-K6	
Q217	8-729-271-23	TRANSISTOR 2SC2712	
Q218	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q219	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q220	8-729-271-23	TRANSISTOR 2SC2712	
Q221	8-729-271-23	TRANSISTOR 2SC2712	
Q222	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q223	8-729-271-23	TRANSISTOR 2SC2712	
Q224	8-729-901-01	TRANSISTOR DTC144EK	
Q225	8-729-901-01	TRANSISTOR DTC144EK	
Q226	8-729-901-01	TRANSISTOR DTC144EK	
Q347	8-729-901-01	TRANSISTOR DTC144EK	
Q348	8-729-901-01	TRANSISTOR DTC144EK	
Q349	8-729-901-01	TRANSISTOR DTC144EK	
Q350	8-729-901-01	TRANSISTOR DTC144EK	
Q351	8-729-271-23	TRANSISTOR 2SC2712	
Q352	8-729-271-23	TRANSISTOR 2SC2712	
Q355	8-729-271-23	TRANSISTOR 2SC2712	
Q356	8-729-901-01	TRANSISTOR DTC144EK	
Q357	8-729-901-01	TRANSISTOR DTC144EK	

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
R1	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R8	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R11	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R002	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R003	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R004	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R005	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R006	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R007	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R009	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R010	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R012	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R013	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R014	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R015	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R016	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R017	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R018	1-216-647-11	METAL CHIP	680	0.50%	1/10W	
R019	1-216-647-11	METAL CHIP	680	0.50%	1/10W	
R020	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R021	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R022	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R023	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R024	1-216-637-11	METAL CHIP	270	0.50%	1/10W	
R025	1-216-637-11	METAL CHIP	270	0.50%	1/10W	
R026	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R027	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R028	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R029	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R030	1-216-009-00	METAL GLAZE	22	5%	1/10W	
R031	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R032	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R033	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R034	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R035	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R036	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R037	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R038	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R039	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R040	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R041	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R048	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R049	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R050	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R051	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R052	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R053	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R054	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R055	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R101	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R102	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R103	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R104	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R105	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R106	1-216-031-00	METAL GLAZE	180	5%	1/10W	
R107	1-216-647-11	METAL CHIP	680	0.50%	1/10W	
R108	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R109	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R111	1-216-066-00	METAL GLAZE	5.1K	5%	1/10W	
R112	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R113	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R114	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R115	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R116	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R117	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R118	1-216-665-11	METAL CHIP	3.9K	0.50%	1/10W	
R119	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R120	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R122	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R123	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R124	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R126	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R127	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R128	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R140	1-216-689-11	METAL CHIP	39K	0.50%	1/10W	

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REF.NO.	PART NO.	DESCRIPTION	REMARK
R141	1-216-683-11	METAL CHIP 22K 0.50% 1/10W	
R142	1-216-681-11	METAL CHIP 18K 0.50% 1/10W	
R143	1-216-683-11	METAL CHIP 22K 0.50% 1/10W	
R144	1-216-683-11	METAL CHIP 22K 0.50% 1/10W	
R145	1-216-683-11	METAL CHIP 22K 0.50% 1/10W	
R146	1-216-683-11	METAL CHIP 22K 0.50% 1/10W	
R149	1-216-683-11	METAL CHIP 22K 0.50% 1/10W	
R201	1-216-643-11	METAL CHIP 470 0.50% 1/10W	
R202	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R204	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R205	1-216-119-00	METAL GLAZE 820K 5% 1/10W	
R206	1-216-109-00	METAL GLAZE 330K 5% 1/10W	
R207	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R208	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R209	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R210	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R211	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R212	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W	
R213	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W	
R216	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R217	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R220	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R221	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R222	1-216-683-11	METAL CHIP 22K 0.50% 1/10W	
R224	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R225	1-216-099-00	METAL GLAZE 120K 5% 1/10W	
R226	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W	
R227	1-216-667-11	METAL CHIP 4.7K 0.50% 1/10W	
R228	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R229	1-216-681-11	METAL CHIP 18K 0.50% 1/10W	
R230	1-216-683-11	METAL CHIP 22K 0.50% 1/10W	
R231	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R232	1-216-667-11	METAL CHIP 4.7K 0.50% 1/10W	
R233	1-216-101-00	METAL GLAZE 150K 5% 1/10W	
R234	1-216-075-00	METAL GLAZE 12K 5% 1/10W	
R235	1-216-099-00	METAL GLAZE 120K 5% 1/10W	
R236	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R237	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R238	1-216-647-11	METAL CHIP 680 0.50% 1/10W	
R239	1-216-691-11	METAL CHIP 47K 0.50% 1/10W	
R240	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	
R241	1-216-643-11	METAL CHIP 470 0.50% 1/10W	
R242	1-216-667-11	METAL CHIP 4.7K 0.50% 1/10W	
R243	1-216-683-11	METAL CHIP 22K 0.50% 1/10W	
R244	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R245	1-216-683-11	METAL CHIP 22K 0.50% 1/10W	
R246	1-216-683-11	METAL CHIP 22K 0.50% 1/10W	
R247	1-216-667-11	METAL CHIP 4.7K 0.50% 1/10W	
R248	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R249	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R250	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R251	1-216-095-00	METAL GLAZE 82K 5% 1/10W	
R252	1-216-083-00	METAL GLAZE 27K 5% 1/10W	
R253	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R254	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R255	1-216-017-00	METAL GLAZE 47 5% 1/10W	
R256	1-216-017-00	METAL GLAZE 47 5% 1/10W	
R257	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R258	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R259	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R260	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R261	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R262	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R263	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
R264	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R265	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R266	1-216-047-00	METAL GLAZE 820 5% 1/10W	
R267	1-216-031-00	METAL GLAZE 180 5% 1/10W	
R268	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R269	1-216-017-00	METAL GLAZE 47 5% 1/10W	
R270	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R271	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R272	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R273	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R274	1-216-017-00	METAL GLAZE 47 5% 1/10W	
R275	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R276	1-216-017-00	METAL GLAZE 47 5% 1/10W	
R277	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R278	1-216-691-11	METAL CHIP 47K 0.50% 1/10W	
R279	1-216-691-11	METAL CHIP 47K 0.50% 1/10W	
R280	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R281	1-216-691-11	METAL CHIP 47K 0.50% 1/10W	
R282	1-216-691-11	METAL CHIP 47K 0.50% 1/10W	
R283	1-216-691-11	METAL CHIP 47K 0.50% 1/10W	
R284	1-216-691-11	METAL CHIP 47K 0.50% 1/10W	
R285	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R286	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R287	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R288	1-216-691-11	METAL CHIP 47K 0.50% 1/10W	
R289	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R290	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R291	1-216-691-11	METAL CHIP 47K 0.50% 1/10W	
R292	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R293	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R294	1-216-095-00	METAL GLAZE 82K 5% 1/10W	
R295	1-216-691-11	METAL CHIP 47K 0.50% 1/10W	
R296	1-216-095-00	METAL GLAZE 82K 5% 1/10W	
R297	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R298	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R299	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R300	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R301	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R303	1-216-681-11	METAL CHIP 18K 0.50% 1/10W	
R304	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R305	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R306	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R307	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R308	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R309	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R310	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R340	1-216-693-11	METAL CHIP 56K 0.50% 1/10W	
R341	1-216-001-00	METAL GLAZE 10 5% 1/10W	
R375	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R376	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	
R377	1-249-393-11	CARBON 10 5% 1/4W	
R379	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R380	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R381	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R382	1-216-095-00	METAL GLAZE 82K 5% 1/10W	
R383	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R384	1-216-017-00	METAL GLAZE 47 5% 1/10W	
R385	1-216-001-00	METAL GLAZE 10 5% 1/10W	
R386	1-216-667-11	METAL CHIP 4.7K 0.50% 1/10W	
R387	1-216-017-00	METAL GLAZE 47 5% 1/10W	
R388	1-216-691-11	METAL CHIP 47K 0.50% 1/10W	
R389	1-216-017-00	METAL GLAZE 47 5% 1/10W	

BA **BB**

REF.NO.	PART NO.	DESCRIPTION				REMARK
		<VARIABLE RESISTOR>				
RV101	1-230-504-11	RES, ADJ, CARBON 220				
RV102	1-228-993-00	RES, ADJ, CARBON 4.7K				
RV201	1-228-995-00	RES, ADJ, CARBON 22K				
RV202	1-228-996-00	RES, ADJ, CARBON 47K				
RV203	1-228-993-00	RES, ADJ, CARBON 4.7K				
RV204	1-226-775-11	RES, ADJ, METAL GLAZE 100K				
RV205	1-226-775-11	RES, ADJ, METAL GLAZE 100K				
		<SWITCH>				
SW1	1-570-859-11	SWITCH, SLIDE				
		<THERMISTOR>				
TH101	1-800-071-99	THERMISTER				
		<CRYSTAL>				
X101	1-567-413-11	VIBRATOR, CRYSTAL				
X102	1-527-789-00	VINRATOR, CRYSTAL				

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	*A-1135-587-A	BB BOARD, COMPLETE				
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	*1-564-595-11	PLUG, CONNECTOR 14P				
	*1-568-984-11	CONNECTOR, MALE 96P				
		<CAPACITOR>				
C402	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C404	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C405	1-126-101-11	ELECT	100MF	20%	16V	
C406	1-124-120-11	ELECT	220MF	20%	16V	
C407	1-126-101-11	ELECT	100MF	20%	16V	
C408	1-123-875-11	ELECT	10MF	20%	50V	
C409	1-126-101-11	ELECT	100MF	20%	16V	
C412	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C413	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C414	1-123-875-11	ELECT	10MF	20%	50V	
C415	1-126-101-11	ELECT	100MF	20%	16V	
C416	1-126-101-11	ELECT	100MF	20%	16V	
C417	1-124-120-11	ELECT	220MF	20%	16V	
C418	1-126-101-11	ELECT	100MF	20%	16V	
C419	1-126-101-11	ELECT	100MF	20%	16V	
C425	1-126-101-11	ELECT	100MF	20%	16V	
C450	1-163-113-00	CERAMIC CHIP	68PF	5%	50V	
C451	1-126-103-11	ELECT	470MF	20%	16V	
C453	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C501	1-124-463-00	ELECT	0.1MF	20%	50V	
C502	1-123-875-11	ELECT	10MF	20%	50V	
C503	1-124-477-11	ELECT	47MF	20%	16V	
C504	1-124-477-11	ELECT	47MF	20%	16V	
C505	1-124-927-11	ELECT	4.7MF	20%	50V	
C506	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C507	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C508	1-124-477-11	ELECT	47MF	20%	16V	
C509	1-163-105-00	CERAMIC CHIP	33PF	5%	50V	
C510	1-124-477-11	ELECT	47MF	20%	16V	
C511	1-126-103-11	ELECT	470MF	20%	16V	
C512	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C513	1-124-477-11	ELECT	47MF	20%	16V	
C514	1-124-927-11	ELECT	4.7MF	20%	50V	
C515	1-124-927-11	ELECT	4.7MF	20%	50V	

REF.NO.	PART NO.	DESCRIPTION				REMARK
C516	1-124-927-11	ELECT	4.7MF	20%	50V	
C517	1-124-927-11	ELECT	4.7MF	20%	50V	
C518	1-124-927-11	ELECT	4.7MF	20%	50V	
C519	1-124-927-11	ELECT	4.7MF	20%	50V	
C520	1-124-499-11	ELECT	1MF	20%	50V	
C521	1-123-875-11	ELECT	10MF	20%	50V	
C650	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C651	1-124-660-11	ELECT	47MF	20%	50V	
C652	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C653	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C654	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C655	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C656	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C657	1-136-169-00	FILM	0.22MF	5%	50V	
C658	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C659	1-136-169-00	FILM	0.22MF	5%	50V	
C660	1-124-660-11	ELECT	47MF	20%	50V	
C661	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C662	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C663	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C664	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C665	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C666	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C667	1-136-169-00	FILM	0.22MF	5%	50V	
C668	1-124-660-11	ELECT	47MF	20%	50V	
C669	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C670	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C671	1-126-101-11	ELECT	100MF	20%	16V	
C672	1-126-101-11	ELECT	100MF	20%	16V	
C673	1-126-101-11	ELECT	100MF	20%	16V	
C674	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C675	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C676	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C677	1-124-910-11	ELECT	47MF	20%	50V	
C678	1-123-875-11	ELECT	10MF	20%	50V	
C679	1-124-122-11	ELECT	100MF	20%	50V	
C680	1-126-103-11	ELECT	470MF	20%	16V	
C681	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C682	1-124-910-11	ELECT	47MF	20%	50V	
C683	1-123-875-11	ELECT	10MF	20%	50V	
C684	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C685	1-126-103-11	ELECT	470MF	20%	16V	
C686	1-124-122-11	ELECT	100MF	20%	50V	
C687	1-124-910-11	ELECT	47MF	20%	50V	
C688	1-123-875-11	ELECT	10MF	20%	50V	
C689	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C690	1-126-103-11	ELECT	470MF	20%	16V	
C691	1-124-122-11	ELECT	100MF	20%	50V	
C692	1-124-122-11	ELECT	100MF	20%	50V	
C693	1-124-122-11	ELECT	100MF	20%	50V	
C694	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C695	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C696	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C697	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C901	1-123-875-11	ELECT	10MF	20%	50V	
C902	1-124-499-11	ELECT	1MF	20%	50V	
C903	1-126-233-11	ELECT	22MF	20%	50V	
C904	1-163-101-00	CERAMIC CHIP	22PF	5%	50V	
C905	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C906	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C907	1-124-499-11	ELECT	1MF	20%	50V	
C908	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C909	1-124-927-11	ELECT	4.7MF	20%	50V	

REF.NO.	PART NO.	DESCRIPTION			REMARK
C910	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C911	1-124-499-11	ELECT 1MF	20%	50V	
C912	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C913	1-163-111-00	CERAMIC CHIP 56PF	5%	50V	
C914	1-126-101-11	ELECT 100MF	20%	16V	

<DIODE>

REF.NO.	PART NO.	DESCRIPTION
D401	8-719-900-95	DIODE V09G
D402	8-719-900-95	DIODE V09G
D450	8-719-400-18	DIODE MA152WK
D451	8-719-400-18	DIODE MA152WK
D501	8-719-400-18	DIODE MA152WK
D502	8-719-400-18	DIODE MA152WK
D503	8-719-400-18	DIODE MA152WK
D504	8-719-105-82	DIODE RD5.1M-B2
D505	8-719-105-82	DIODE RD5.1M-B2
D506	8-719-105-82	DIODE RD5.1M-B2
D507	8-719-105-82	DIODE RD5.1M-B2
D508	8-719-105-82	DIODE RD5.1M-B2
D509	8-719-105-82	DIODE RD5.1M-B2
D510	8-719-105-82	DIODE RD5.1M-B2
D511	8-719-105-82	DIODE RD5.1M-B2
D512	8-719-105-82	DIODE RD5.1M-B2
D513	8-719-105-82	DIODE RD5.1M-B2
D514	8-719-105-82	DIODE RD5.1M-B2
D515	8-719-105-82	DIODE RD5.1M-B2
D516	8-719-106-80	DIODE RD13M-B2
D518	8-719-106-80	DIODE RD13M-B2
D520	8-719-105-82	DIODE RD5.1M-B2
D521	8-719-105-82	DIODE RD5.1M-B2
D522	8-719-106-80	DIODE RD13M-B2
D523	8-719-106-80	DIODE RD13M-B2
D650	8-719-400-18	DIODE MA152WK
D652	8-719-400-18	DIODE MA152WK
D653	8-719-400-18	DIODE MA152WK
D654	8-719-800-76	DIODE 1SS226
D655	8-719-800-76	DIODE 1SS226
D656	8-719-800-76	DIODE 1SS226
D901	8-719-400-18	DIODE MA152WK
D902	8-719-400-18	DIODE MA152WK
D903	8-719-104-34	DIODE 1S2836
D904	8-719-400-18	DIODE MA152WK
D905	8-719-105-99	DIODE RD6.2M-B1
D906	8-719-104-34	DIODE 1S2836

<IC>

REF.NO.	PART NO.	DESCRIPTION
IC401	8-759-800-81	IC LA7016
IC402	8-759-604-39	IC M5F78M12
IC403	8-759-982-55	IC RC79M12FA
IC404	8-759-240-53	IC TC4053BP
IC405	8-759-232-64	IC TC74HC157AP
IC407	8-759-232-64	IC TC74HC157AP
IC408	8-759-240-53	IC TC4053BP
IC409	8-759-240-53	IC TC4053BP
IC410	8-759-945-58	IC RC4558P
IC411	8-759-945-58	IC RC4558P
IC412	8-759-145-27	IC UPC1406HA
IC413	8-759-000-01	IC MC74HC4538N

<JACK>

REF.NO.	PART NO.	DESCRIPTION
J101	*1-566-980-11	CONNECTOR, ROUND TYPE 4P
J102	1-537-257-21	TERMINAL BOARD, INPUT/OUTPUT
J103	1-537-255-11	TERMINAL BOARD, INPUT/OUTPUT

<COIL>

REF.NO.	PART NO.	DESCRIPTION
L401	1-459-155-00	COIL (WITH CORE) 45UH
L402	1-459-155-00	COIL (WITH CORE) 45UH
L403	1-459-155-00	COIL (WITH CORE) 45UH
L404	1-459-155-00	COIL (WITH CORE) 45UH
L405	1-410-671-31	INDUCTOR 47UH
L650	1-410-482-31	INDUCTOR 100UH
L651	1-410-482-31	INDUCTOR 100UH

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION
Q401	8-729-140-96	TRANSISTOR 2SD774-34
Q402	8-729-140-97	TRANSISTOR 2SB734-34
Q450	8-729-271-23	TRANSISTOR 2SC2712
Q451	8-729-271-23	TRANSISTOR 2SC2712
Q452	8-729-271-23	TRANSISTOR 2SC2712
Q453	8-729-901-00	TRANSISTOR DTC124EK
Q454	8-729-901-00	TRANSISTOR DTC124EK
Q456	8-729-271-23	TRANSISTOR 2SC2712
Q457	8-729-230-46	TRANSISTOR 2SA1162-YG
Q501	8-729-271-23	TRANSISTOR 2SC2712
Q502	8-729-271-23	TRANSISTOR 2SC2712
Q503	8-729-271-23	TRANSISTOR 2SC2712
Q504	8-729-271-23	TRANSISTOR 2SC2712
Q505	8-729-901-01	TRANSISTOR DTC144EK
Q506	8-729-112-65	TRANSISTOR 2SA1462
Q507	8-729-112-65	TRANSISTOR 2SA1462
Q508	8-729-112-65	TRANSISTOR 2SA1462
Q509	8-729-112-65	TRANSISTOR 2SA1462
Q510	8-729-901-01	TRANSISTOR DTC144EK
Q511	8-729-901-01	TRANSISTOR DTC144EK
Q512	8-729-271-23	TRANSISTOR 2SC2712
Q513	8-729-271-23	TRANSISTOR 2SC2712
Q514	8-729-271-23	TRANSISTOR 2SC2712
Q515	8-729-271-23	TRANSISTOR 2SC2712
Q516	8-729-112-65	TRANSISTOR 2SA1462
Q517	8-729-112-65	TRANSISTOR 2SA1462
Q518	8-729-271-23	TRANSISTOR 2SC2712
Q519	8-729-271-23	TRANSISTOR 2SC2712
Q520	8-729-901-00	TRANSISTOR DTC124EK
Q521	8-729-271-23	TRANSISTOR 2SC2712
Q522	8-729-901-01	TRANSISTOR DTC144EK
Q523	8-729-271-23	TRANSISTOR 2SC2712
Q524	8-729-901-01	TRANSISTOR DTC144EK
Q525	8-729-901-01	TRANSISTOR DTC144EK
Q526	8-729-901-01	TRANSISTOR DTC144EK
Q527	8-729-901-01	TRANSISTOR DTC144EK
Q528	8-729-901-01	TRANSISTOR DTC144EK
Q529	8-729-901-01	TRANSISTOR DTC144EK
Q530	8-729-901-01	TRANSISTOR DTC144EK
Q531	8-729-901-01	TRANSISTOR DTC144EK
Q537	8-729-901-01	TRANSISTOR DTC144EK
Q538	8-729-901-01	TRANSISTOR DTC144EK
Q539	8-729-901-01	TRANSISTOR DTC144EK
Q540	8-729-901-01	TRANSISTOR DTC144EK
Q541	8-729-378-92	TRANSISTOR 2SD789-4
Q542	8-729-901-01	TRANSISTOR DTC144EK
Q650	8-729-902-96	TRANSISTOR FMS1
Q651	8-729-902-96	TRANSISTOR FMS1
Q652	8-729-112-65	TRANSISTOR 2SA1462

Bb

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q653	8-729-901-00	TRANSISTOR DTC124EK	
Q654	8-729-112-65	TRANSISTOR 2SA1462	
Q655	8-729-112-65	TRANSISTOR 2SA1462	
Q656	8-729-901-00	TRANSISTOR DTC124EK	
Q657	8-729-107-31	TRANSISTOR 2SC3545	
Q658	8-729-107-31	TRANSISTOR 2SC3545	
Q659	8-729-107-31	TRANSISTOR 2SC3545	
Q660	8-729-107-31	TRANSISTOR 2SC3545	
Q661	8-729-107-31	TRANSISTOR 2SC3545	
Q662	8-729-107-31	TRANSISTOR 2SC3545	
Q663	8-729-112-65	TRANSISTOR 2SA1462	
Q664	8-729-107-31	TRANSISTOR 2SC3545	
Q665	8-729-112-65	TRANSISTOR 2SA1462	
Q666	8-729-116-06	TRANSISTOR 2SK160-K6	
Q667	8-729-107-31	TRANSISTOR 2SC3545	
Q668	8-729-112-65	TRANSISTOR 2SA1462	
Q669	8-729-112-65	TRANSISTOR 2SA1462	
Q670	8-729-112-65	TRANSISTOR 2SA1462	
Q671	8-729-901-00	TRANSISTOR DTC124EK	
Q672	8-729-901-00	TRANSISTOR DTC124EK	
Q673	8-729-107-31	TRANSISTOR 2SC3545	
Q674	8-729-107-31	TRANSISTOR 2SC3545	
Q675	8-729-107-31	TRANSISTOR 2SC3545	
Q676	8-729-107-31	TRANSISTOR 2SC3545	
Q677	8-729-107-31	TRANSISTOR 2SC3545	
Q678	8-729-107-31	TRANSISTOR 2SC3545	
Q679	8-729-107-31	TRANSISTOR 2SC3545	
Q680	8-729-107-31	TRANSISTOR 2SC3545	
Q681	8-729-107-31	TRANSISTOR 2SC3545	
Q682	8-729-107-31	TRANSISTOR 2SC3545	
Q683	8-729-112-65	TRANSISTOR 2SA1462	
Q684	8-729-107-31	TRANSISTOR 2SC3545	
Q685	8-729-107-31	TRANSISTOR 2SC3545	
Q686	8-729-107-31	TRANSISTOR 2SC3545	
Q687	8-729-112-65	TRANSISTOR 2SA1462	
Q688	8-729-112-65	TRANSISTOR 2SA1462	
Q689	8-729-901-00	TRANSISTOR DTC124EK	
Q690	8-729-901-00	TRANSISTOR DTC124EK	
Q691	8-729-107-31	TRANSISTOR 2SC3545	
Q692	8-729-107-31	TRANSISTOR 2SC3545	
Q693	8-729-107-31	TRANSISTOR 2SC3545	
Q694	8-729-107-31	TRANSISTOR 2SC3545	
Q695	8-729-107-31	TRANSISTOR 2SC3545	
Q696	8-729-107-31	TRANSISTOR 2SC3545	
Q697	8-729-107-31	TRANSISTOR 2SC3545	
Q698	8-729-107-31	TRANSISTOR 2SC3545	
Q699	8-729-107-31	TRANSISTOR 2SC3545	
Q701	8-729-107-31	TRANSISTOR 2SC3545	
Q702	8-729-112-65	TRANSISTOR 2SA1462	
Q703	8-729-107-31	TRANSISTOR 2SC3545	
Q704	8-729-107-31	TRANSISTOR 2SC3545	
Q705	8-729-107-31	TRANSISTOR 2SC3545	
Q706	8-729-112-65	TRANSISTOR 2SA1462	
Q707	8-729-112-65	TRANSISTOR 2SA1462	
Q708	8-729-901-00	TRANSISTOR DTC124EK	
Q709	8-729-901-00	TRANSISTOR DTC124EK	
Q710	8-729-107-31	TRANSISTOR 2SC3545	
Q711	8-729-107-31	TRANSISTOR 2SC3545	
Q712	8-729-107-31	TRANSISTOR 2SC3545	
Q713	8-729-107-31	TRANSISTOR 2SC3545	
Q714	8-729-107-31	TRANSISTOR 2SC3545	
Q715	8-729-107-31	TRANSISTOR 2SC3545	
Q716	8-729-107-31	TRANSISTOR 2SC3545	
Q717	8-729-107-31	TRANSISTOR 2SC3545	
Q718	8-729-107-31	TRANSISTOR 2SC3545	
Q719	8-729-107-31	TRANSISTOR 2SC3545	
Q720	8-729-112-65	TRANSISTOR 2SA1462	
Q721	8-729-107-31	TRANSISTOR 2SC3545	
Q722	8-729-107-31	TRANSISTOR 2SC3545	
Q723	8-729-107-31	TRANSISTOR 2SC3545	
Q724	8-729-116-06	TRANSISTOR 2SK160-K6	
Q725	8-729-107-31	TRANSISTOR 2SC3545	
Q726	8-729-107-31	TRANSISTOR 2SC3545	
Q727	8-729-112-65	TRANSISTOR 2SA1462	
Q728	8-729-923-06	TRANSISTOR FMW-8	
Q729	8-729-112-65	TRANSISTOR 2SA1462	
Q730	8-729-923-06	TRANSISTOR FMW-8	
Q731	8-729-107-31	TRANSISTOR 2SC3545	
Q732	8-729-107-31	TRANSISTOR 2SC3545	
Q733	8-729-901-00	TRANSISTOR DTC124EK	
Q734	8-729-271-23	TRANSISTOR 2SC2712	
Q735	8-729-271-23	TRANSISTOR 2SC2712	
Q736	8-729-112-65	TRANSISTOR 2SA1462	
Q737	8-729-107-31	TRANSISTOR 2SC3545	
Q738	8-729-116-06	TRANSISTOR 2SK160-K6	
Q739	8-729-112-65	TRANSISTOR 2SA1462	
Q740	8-729-107-31	TRANSISTOR 2SC3545	
Q901	8-729-903-10	TRANSISTOR FMW1	
Q902	8-729-903-10	TRANSISTOR FMW1	
Q903	8-729-112-65	TRANSISTOR 2SA1462	
Q904	8-729-901-00	TRANSISTOR DTC124EK	
Q905	8-729-112-65	TRANSISTOR 2SA1462	
Q906	8-729-162-13	TRANSISTOR 2SC1621	
Q907	8-729-902-96	TRANSISTOR FMS1	
Q908	8-729-271-23	TRANSISTOR 2SC2712	
Q909	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q910	8-729-902-96	TRANSISTOR FMS1	
Q911	8-729-162-13	TRANSISTOR 2SC1621	
Q912	8-729-271-23	TRANSISTOR 2SC2712	
Q913	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q914	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q915	8-729-902-96	TRANSISTOR FMS1	
Q916	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q917	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q918	8-729-271-23	TRANSISTOR 2SC2712	
Q919	8-729-271-23	TRANSISTOR 2SC2712	
Q920	8-729-271-23	TRANSISTOR 2SC2712	
Q921	8-729-271-23	TRANSISTOR 2SC2712	
Q922	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q923	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q924	8-729-271-23	TRANSISTOR 2SC2712	

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
R401	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R403	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R450	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R451	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R452	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R453	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R454	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R455	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R456	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R459	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R460	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R461	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R462	1-216-073-00	METAL GLAZE	10K	5%	1/10W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R463	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R464	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R466	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R467	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R468	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R469	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R470	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R471	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R472	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R473	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R474	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R501	1-216-022-00	METAL GLAZE	75	5%	1/10W	
R502	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R503	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R504	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R505	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R506	1-216-022-00	METAL GLAZE	75	5%	1/10W	
R507	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R508	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R509	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R510	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R511	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R512	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R513	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R514	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R515	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R516	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R517	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R518	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R519	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R520	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R521	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R522	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R523	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R524	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R525	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R526	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R527	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R528	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R529	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R530	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R531	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R532	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R533	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R534	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R535	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R536	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R537	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R538	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R539	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R540	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R541	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R542	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R543	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R544	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R545	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R546	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R547	1-216-631-11	METAL CHIP	150	0.50%	1/10W	
R548	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R549	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R550	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R551	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R552	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R553	1-216-025-00	METAL GLAZE	100	5%	1/10W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R554	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R555	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R556	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R557	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R558	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R559	1-216-631-11	METAL CHIP	150	0.50%	1/10W	
R560	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R561	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R562	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R563	1-216-035-00	METAL GLAZE	270	5%	1/10W	
R564	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R565	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R566	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R567	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R568	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R569	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R570	1-216-022-00	METAL GLAZE	75	5%	1/10W	
R571	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R572	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R573	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R574	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R575	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R576	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R577	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R578	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R579	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R580	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R581	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R582	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R583	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R584	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R585	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R586	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R587	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R588	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R589	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R590	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R591	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R592	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R593	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R594	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R595	1-216-693-11	METAL CHIP	56K	0.50%	1/10W	
R596	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R597	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R598	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R599	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R600	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R601	1-216-631-11	METAL CHIP	150	0.50%	1/10W	
R602	1-216-631-11	METAL CHIP	150	0.50%	1/10W	
R603	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R604	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R605	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R606	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R607	1-216-117-00	METAL GLAZE	680K	5%	1/10W	
R608	1-216-099-00	METAL GLAZE	120K	5%	1/10W	
R609	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R610	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R650	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R651	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R652	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R653	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R654	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R655	1-216-643-11	METAL CHIP	470	0.50%	1/10W	

BB

REF.NO.	PART NO.	DESCRIPTION				REMARK
R656	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R657	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R658	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R659	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R660	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R661	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R662	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R663	1-216-027-00	METAL GLAZE	120	5%	1/10W	
R664	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R665	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R666	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R667	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R668	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R669	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R670	1-216-647-11	METAL CHIP	680	0.50%	1/10W	
R671	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R672	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R673	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R674	1-216-647-11	METAL CHIP	680	0.50%	1/10W	
R675	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R676	1-216-647-11	METAL CHIP	680	0.50%	1/10W	
R677	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R678	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R679	1-216-647-11	METAL CHIP	680	0.50%	1/10W	
R680	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R681	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R682	1-216-647-11	METAL CHIP	680	0.50%	1/10W	
R683	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R684	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R685	1-216-647-11	METAL CHIP	680	0.50%	1/10W	
R686	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R687	1-216-022-00	METAL GLAZE	75	5%	1/10W	
R688	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R689	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R690	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R691	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R692	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R693	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R694	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R695	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R696	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R697	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R698	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R699	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R701	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R702	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R703	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R704	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R705	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R706	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R707	1-216-647-11	METAL CHIP	680	0.50%	1/10W	
R708	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R709	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R710	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R711	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R712	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R713	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R714	1-216-647-11	METAL CHIP	680	0.50%	1/10W	
R715	1-216-647-11	METAL CHIP	680	0.50%	1/10W	
R716	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R717	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R718	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R719	1-216-647-11	METAL CHIP	680	0.50%	1/10W	
R720	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R721	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R722	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R723	1-216-021-00	METAL GLAZE	68	5%	1/10W	
R724	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R725	1-216-647-11	METAL CHIP	680	0.50%	1/10W	
R726	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R727	1-216-019-00	METAL GLAZE	56	5%	1/10W	
R728	1-216-022-00	METAL GLAZE	75	5%	1/10W	
R729	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R730	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R731	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R732	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R733	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R734	1-216-022-00	METAL GLAZE	75	5%	1/10W	
R735	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R736	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R737	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R738	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R739	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R740	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R741	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R742	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R743	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R744	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R745	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R746	1-216-625-11	METAL CHIP	82	0.50%	1/10W	
R747	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R748	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R749	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R750	1-216-629-11	METAL CHIP	120	0.50%	1/10W	
R751	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R752	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R753	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R754	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R755	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R756	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R757	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R758	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R759	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R760	1-216-647-11	METAL CHIP	680	0.50%	1/10W	
R761	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R762	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R763	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R764	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R765	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R766	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R767	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R768	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R769	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R770	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R771	1-216-647-11	METAL CHIP	680	0.50%	1/10W	
R772	1-216-647-11	METAL CHIP	680	0.50%	1/10W	
R773	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R774	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R775	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R776	1-216-647-11	METAL CHIP	680	0.50%	1/10W	
R777	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R778	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R779	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R780	1-216-021-00	METAL GLAZE	68	5%	1/10W	
R781	1-216-647-11	METAL CHIP	680	0.50%	1/10W	
R782	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R783	1-216-022-00	METAL GLAZE	75	5%	1/10W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R784	1-216-019-00	METAL GLAZE	56	5%	1/10W	
R785	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R786	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R787	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R788	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R789	1-216-022-00	METAL GLAZE	75	5%	1/10W	
R790	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R791	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R792	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R793	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R794	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R795	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R796	1-216-665-11	METAL CHIP	3.9K	0.50%	1/10W	
R797	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R798	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R799	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R801	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R802	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R803	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R804	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R805	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R806	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R807	1-216-647-11	METAL CHIP	680	0.50%	1/10W	
R808	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R809	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R810	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R811	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R812	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R813	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R814	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R815	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R816	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R817	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R818	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R819	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R820	1-216-647-11	METAL CHIP	680	0.50%	1/10W	
R821	1-216-647-11	METAL CHIP	680	0.50%	1/10W	
R822	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R823	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R824	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R825	1-216-021-00	METAL GLAZE	68	5%	1/10W	
R826	1-216-647-11	METAL CHIP	680	0.50%	1/10W	
R827	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R828	1-216-019-00	METAL GLAZE	56	5%	1/10W	
R829	1-216-022-00	METAL GLAZE	75	5%	1/10W	
R830	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R831	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R832	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R833	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R834	1-216-647-11	METAL CHIP	680	0.50%	1/10W	
R835	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R836	1-216-631-11	METAL CHIP	150	0.50%	1/10W	
R837	1-216-631-11	METAL CHIP	150	0.50%	1/10W	
R901	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R902	1-216-665-11	METAL CHIP	3.9K	0.50%	1/10W	
R903	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R904	1-216-647-11	METAL CHIP	680	0.50%	1/10W	
R905	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R906	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R907	1-216-647-11	METAL CHIP	680	0.50%	1/10W	
R908	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R909	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R910	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R911	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R912	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R913	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R914	1-216-647-11	METAL CHIP	680	0.50%	1/10W	
R915	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R917	1-216-687-11	METAL CHIP	33K	0.50%	1/10W	
R918	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R919	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R920	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R921	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R922	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R923	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R924	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R925	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R926	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R927	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R928	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R929	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R930	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R931	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R932	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R933	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R934	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R935	1-216-095-00	METAL GLAZE	82K	5%	1/10W	
R936	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R937	1-216-031-00	METAL GLAZE	180	5%	1/10W	
R938	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R939	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R940	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R941	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R942	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R943	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R944	1-216-665-11	METAL CHIP	3.9K	0.50%	1/10W	
R945	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R961	1-216-025-00	METAL GLAZE	100	5%	1/10W	

<RELAY>

REF.NO.	PART NO.	DESCRIPTION
RL401	1-515-757-11	RELAY
RL402	1-515-757-11	RELAY
RL403	1-515-757-11	RELAY

<VARIABLE RESISTOR>

REF.NO.	PART NO.	DESCRIPTION
RV901	1-228-994-00	RES, ADJ, CARBON 10K

<SWITCH>

REF.NO.	PART NO.	DESCRIPTION
SW1	1-570-859-11	SWITCH, SLIDE

****

*1-629-815-11 PB BOARD
****

*1-564-506-11 PLUG, CONNECTOR 3P
*4-341-752-01 EYELET

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION			
C501	1-136-103-00	FILM	0.1MF	5%	200V
C502	1-136-103-00	FILM	0.1MF	5%	200V

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION	REMARK

<TRANSFORMER>

REF.NO.	PART NO.	DESCRIPTION
FBT1 ⚠	1-439-466-11	TRANSFORMER ASSY, FLYBACK (NX-2500)
FBT2 ⚠	1-439-466-21	TRANSFORMER ASSY, FLYBACK (NX-2502)

<NEON LAMP>

REF.NO.	PART NO.	DESCRIPTION
NL501	1-519-108-99	LAMP, NEON
NL502	1-519-108-99	LAMP, NEON

****

*A-1195-036-A PA BOARD, COMPLETE
****

PART NO.	DESCRIPTION
1-506-348-99	PIN, CONNECOTR 5P
*1-508-765-00	PIN, CONNECTOR (5MM PITCH) 3P
*1-564-518-11	PLUG, CONNECTOR 3P
*1-564-520-11	PLUG, CONNECTOR 5P
*1-564-521-11	PLUG, CONNECTOR 6P
*1-564-523-11	PLUG, CONNECTOR 8P
*1-564-526-11	PLUG, CONNECTOR 11P
*1-564-528-11	PLUG, CONNECTOR 13P
*4-341-751-01	EYELET
*4-391-515-11	SHEET (A), INSULATOR

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION	VALUE	TOL.	VOLTAGE
C1	1-124-499-11	ELECT	1MF	20%	50V
C2	1-124-499-11	ELECT	1MF	20%	50V
C3	1-124-927-11	ELECT	4.7MF	20%	50V
C4	1-124-927-11	ELECT	4.7MF	20%	50V
C5	1-124-927-11	ELECT	4.7MF	20%	50V
C6	1-124-927-11	ELECT	4.7MF	20%	50V
C7	1-123-875-11	ELECT	10MF	20%	50V
C8	1-136-153-00	FILM	0.01MF	5%	50V
C9	1-124-963-11	ELECT	33MF	20%	16V
C10	1-124-925-11	ELECT	2.2MF	20%	50V
C11	1-136-165-00	FILM	0.1MF	5%	50V
C12	1-123-875-11	ELECT	10MF	20%	50V
C13	1-136-169-00	FILM	0.22MF	5%	50V
C14	1-123-875-11	ELECT	10MF	20%	50V
C15	1-124-119-00	ELECT	330MF	20%	16V
C16	1-102-824-00	CERAMIC	470PF	5%	50V
C17	1-136-165-00	FILM	0.1MF	5%	50V
C18	1-136-165-00	FILM	0.1MF	5%	50V
C19	1-136-165-00	FILM	0.1MF	5%	50V
C20	1-136-165-00	FILM	0.1MF	5%	50V
C21	1-126-101-11	ELECT	100MF	20%	16V
C22	1-136-169-00	FILM	0.22MF	5%	50V
C23	1-130-475-00	MYLAR	0.0022MF	5%	50V
C24	1-130-475-00	MYLAR	0.0022MF	5%	50V
C25	1-102-973-00	CERAMIC	100PF	5%	50V
C26	1-123-875-11	ELECT	10MF	20%	50V
C27	1-124-925-11	ELECT	2.2MF	20%	50V
C28	1-136-159-00	FILM	0.033MF	5%	50V
C29	1-124-927-11	ELECT	4.7MF	20%	50V
C30	1-101-004-00	CERAMIC	0.01MF		50V
C31	1-101-004-00	CERAMIC	0.01MF		50V
C32	1-102-973-00	CERAMIC	100PF	5%	50V
C33	1-102-973-00	CERAMIC	100PF	5%	50V
C34	1-102-973-00	CERAMIC	100PF	5%	50V
C35	1-101-884-00	CERAMIC	56PF	5%	50V
C36	1-136-165-00	FILM	0.1MF	5%	50V
C37	1-102-030-00	CERAMIC	330PF	10%	500V
C38	1-124-499-11	ELECT	1MF	20%	50V
C39	1-124-499-11	ELECT	1MF	20%	50V
C40	1-108-700-11	MYLAR	0.047MF	10%	200V
C41	1-108-704-11	MYLAR	0.1MF	10%	200V
C42	1-124-499-11	ELECT	1MF	20%	50V
C43	1-102-973-00	CERAMIC	100PF	5%	50V
C44	1-162-117-00	CERAMIC	100PF	10%	500V
C45	1-123-875-11	ELECT	10MF	20%	50V
C46	1-126-101-11	ELECT	100MF	20%	16V
C47	1-124-927-11	ELECT	4.7MF	20%	50V
C50	1-124-927-11	ELECT	4.7MF	20%	50V
C51 ⚠	1-136-948-11	FILM	24000MF	3%	1.6KV
C52	1-124-494-00	ELECT	33MF		160V
C53	1-136-134-00	FILM	1.5MF	5%	400V
C54 ⚠	1-136-134-00	FILM	1.5MF	5%	400V
C55	1-123-875-11	ELECT	10MF	20%	50V
C56	1-124-925-11	ELECT	2.2MF	20%	50V
C57	1-136-165-00	FILM	0.1MF	5%	50V
C58	1-124-477-11	ELECT	47MF	20%	16V
C59	1-136-165-00	FILM	0.1MF	5%	50V
C60	1-136-153-00	FILM	0.01MF	5%	50V
C61	1-136-153-00	FILM	0.01MF	5%	50V
C62	1-136-165-00	FILM	0.1MF	5%	50V
C63	1-136-165-00	FILM	0.1MF	5%	50V
C64	1-136-153-00	FILM	0.01MF	5%	50V
C65	1-136-103-00	FILM	0.1MF	5%	200V
C66	1-124-046-00	ELECT	10MF	20%	160V
C67	1-136-153-00	FILM	0.01MF	5%	50V
C68	1-136-153-00	FILM	0.01MF	5%	50V

<DIODE>

REF.NO.	PART NO.	DESCRIPTION
D3	8-719-911-19	DIODE 1SS119
D4	8-719-911-19	DIODE 1SS119
D5	8-719-109-85	DIODE RD5.1ES-B2
D6	8-719-911-19	DIODE 1SS119
D7	8-719-911-19	DIODE 1SS119
D8	8-719-911-19	DIODE 1SS119
D9	8-719-911-19	DIODE 1SS119
D10	8-719-109-85	DIODE RD5.1ES-B2
D11	8-719-911-19	DIODE 1SS119
D12	8-719-109-85	DIODE RD5.1ES-B2
D13	8-719-911-19	DIODE 1SS119
D14	8-719-110-17	DIODE RD10ES-B2
D16	8-719-911-19	DIODE 1SS119
D18	8-719-911-19	DIODE 1SS119
D20	8-719-945-81	DIODE ERC06-15SA
D21	8-719-945-81	DIODE ERC06-15SA
D22	8-719-300-80	DIODE RU-1C
D23	8-719-900-26	DIODE ERD29-08J
D24	8-719-911-19	DIODE 1SS119
D25	8-719-911-19	DIODE 1SS119
D26	8-719-911-19	DIODE 1SS119
D27	8-719-110-17	DIODE RD10ES-B2
D28	8-719-911-19	DIODE 1SS119
D29	8-719-911-19	DIODE 1SS119

<IC>

REF.NO.	PART NO.	DESCRIPTION
IC1	8-759-990-82	IC TL082CP
IC2	8-759-103-93	IC UPC393C
IC3	8-759-103-93	IC UPC393C
IC4	8-759-103-93	IC UPC393C
IC5	8-759-604-39	IC M5F78M12
IC6	8-759-100-75	IC UPC1394C
IC7	8-759-240-40	IC TC4040BP

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

- The components identified by ⊠ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.

REF.NO.	PART NO.	DESCRIPTION				REMARK
IC8	8-759-045-72	IC MC14572UBCP				
IC9	8-759-908-15	IC TL431CLP				
		<COIL>				
L1	1-459-614-11	COIL, CHOKE 90UH				
L2	1-459-863-11	COIL, CHOKE 2.1MMH				
L3 ⚠	1-459-863-11	COIL, CHOKE 2.1MMH				
L4 ⚠	1-459-863-11	COIL, CHOKE 2.1MMH				
L5	1-459-155-00	COIL (WITH CORE) 45UH				
L6	1-459-155-00	COIL (WITH CORE) 45UH				
		<NEON LAMP>				
NL1	1-519-108-99	LAMP, NEON				
		<TRANSISTOR>				
Q1	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q2	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q3	8-729-119-76	TRANSISTOR 2SA1175-HFE				
Q4	8-729-119-76	TRANSISTOR 2SA1175-HFE				
Q5	8-729-119-80	TRANSISTOR 2SC2688-LK				
Q6	8-729-119-80	TRANSISTOR 2SC2688-LK				
Q7	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q8	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q9	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q10	8-729-208-10	TRANSISTOR 2SD1548				
Q11	8-729-201-62	TRANSISTOR 2SC2555				
Q12	8-729-119-76	TRANSISTOR 2SA1175-HFE				
Q13	8-729-119-76	TRANSISTOR 2SA1175-HFE				
Q14	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q15	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q16	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q17	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q18	8-729-804-48	TRANSISTOR 2SC3675				
Q19	8-729-801-88	TRANSISTOR 2SA1381				
Q20	8-729-119-76	TRANSISTOR 2SA1175-HFE				
		<RESISTOR>				
⊠R1 ⚠		METAL			1/6W	
R2	1-249-433-11	CARBON	22K	5%	1/4W	
R3	1-249-439-11	CARBON	68K	5%	1/4W	
⊠R4 ⚠		METAL			1/6W	
R5	1-249-433-11	CARBON	22K	5%	1/4W	
R6	1-249-439-11	CARBON	68K	5%	1/4W	
R7	1-249-433-11	CARBON	22K	5%	1/4W	
R8	1-249-433-11	CARBON	22K	5%	1/4W	
R9	1-249-423-11	CARBON	3.3K	5%	1/4W	
R10	1-249-429-11	CARBON	10K	5%	1/4W	
R11	1-249-435-11	CARBON	33K	5%	1/4W	
R12	1-249-429-11	CARBON	10K	5%	1/4W	
R13	1-249-429-11	CARBON	10K	5%	1/4W	
R14	1-215-453-00	METAL	22K	1%	1/6W	
R15	1-215-453-00	METAL	22K	1%	1/6W	
R16	1-249-433-11	CARBON	22K	5%	1/4W	
R17	1-249-429-11	CARBON	10K	5%	1/4W	
R18	1-249-429-11	CARBON	10K	5%	1/4W	
R19	1-249-429-11	CARBON	10K	5%	1/4W	
R20	1-249-433-11	CARBON	22K	5%	1/4W	
R21	1-249-441-11	CARBON	100K	5%	1/4W	
R22	1-215-463-00	METAL	56K	1%	1/6W	
R23	1-215-455-00	METAL	27K	1%	1/6W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R24	1-249-429-11	CARBON	10K	5%	1/4W	
R25	1-249-435-11	CARBON	33K	5%	1/4W	
R26	1-249-417-11	CARBON	1K	5%	1/4W	
R28	1-215-423-00	METAL	1.2K	1%	1/6W	
⊠R29 ⚠		METAL			1/6W	
⊠R30 ⚠		METAL			1/6W	
R31	1-249-429-11	CARBON	10K	5%	1/4W	
R32	1-215-473-00	METAL	150K	1%	1/6W	
⊠R33 ⚠		CARBON			1/4W	
⊠R34 ⚠		CARBON			1/4W	
R35	1-249-417-11	CARBON	1K	5%	1/4W	
R36	1-249-423-11	CARBON	3.3K	5%	1/4W	
R37	1-215-469-00	METAL	100K	1%	1/6W	
R38	1-215-453-00	METAL	22K	1%	1/6W	
R39	1-215-455-00	METAL	27K	1%	1/6W	
R40	1-249-417-11	CARBON	1K	5%	1/4W	
⊠R41 ⚠		CARBON			1/4W	
⊠R42 ⚠		CARBON			1/4W	
R43	1-215-461-00	METAL	47K	1%	1/6W	
R44	1-215-432-00	METAL	3K	1%	1/6W	
R45	1-215-432-00	METAL	3K	1%	1/6W	
R46	1-215-432-00	METAL	3K	1%	1/6W	
R47	1-215-432-00	METAL	3K	1%	1/6W	
R48	1-215-469-00	METAL	100K	1%	1/6W	
R49	1-215-469-00	METAL	100K	1%	1/6W	
R50	1-215-469-00	METAL	100K	1%	1/6W	
R53	1-249-419-11	CARBON	1.5K	5%	1/4W	
R55	1-215-429-00	METAL	2.2K	1%	1/6W	
R56	1-215-445-00	METAL	10K	1%	1/6W	
R57	1-249-441-11	CARBON	100K	5%	1/4W	
R58	1-249-441-11	CARBON	100K	5%	1/4W	
R59	1-249-413-11	CARBON	470	5%	1/4W	
R60	1-249-437-11	CARBON	47K	5%	1/4W	
R61	1-215-443-00	METAL	8.2K	1%	1/6W	
R62	1-215-455-00	METAL	27K	1%	1/6W	
R63	1-249-431-11	CARBON	15K	5%	1/4W	
R64	1-249-417-11	CARBON	1K	5%	1/4W	
R65	1-249-435-11	CARBON	33K	5%	1/4W	
R66	1-249-441-11	CARBON	100K	5%	1/4W	
R67	1-247-903-00	CARBON	1M	5%	1/4W	
R68	1-249-417-11	CARBON	1K	5%	1/4W	
R69	1-249-423-11	CARBON	3.3K	5%	1/4W	
R70	1-249-429-11	CARBON	10K	5%	1/4W	
R71	1-249-417-11	CARBON	1K	5%	1/4W	
R72	1-249-423-11	CARBON	3.3K	5%	1/4W	
R73	1-249-423-11	CARBON	3.3K	5%	1/4W	
R74	1-249-417-11	CARBON	1K	5%	1/4W	
R75	1-249-417-11	CARBON	1K	5%	1/4W	
R76	1-249-417-11	CARBON	1K	5%	1/4W	
R77	1-216-489-11	METAL OXIDE	27K	5%	3W	F
R78	1-216-489-11	METAL OXIDE	27K	5%	3W	F
R79	1-249-425-11	CARBON	4.7K	5%	1/4W	
R80	1-249-405-11	CARBON	100	5%	1/4W	
R81	1-247-725-11	CARBON	10K	5%	1/4W	F
R82	1-249-441-11	CARBON	100K	5%	1/4W	
R83	1-247-725-11	CARBON	10K	5%	1/4W	F
R84	1-247-881-00	CARBON	120K	5%	1/4W	
R85	1-247-883-00	CARBON	150K	5%	1/4W	
R86	1-249-460-11	CARBON	15K	5%	1/4W	F
R87	1-249-421-11	CARBON	2.2K	5%	1/4W	
R88	1-249-441-11	CARBON	100K	5%	1/4W	
R89	1-216-378-11	METAL OXIDE	5.6	5%	2W	F
R90	1-249-417-11	CARBON	1K	5%	1/4W	

PA NA NB RC

REF.NO.	PART NO.	DESCRIPTION				REMARK
R91	1-249-425-11	CARBON	4.7K	5%	1/4W	
R92	1-247-903-00	CARBON	1M	5%	1/4W	
R93	1-249-439-11	CARBON	68K	5%	1/4W	
R94	1-249-433-11	CARBON	22K	5%	1/4W	
R95	1-215-461-00	METAL	47K	1%	1/6W	
R96	1-249-437-11	CARBON	47K	5%	1/4W	
R97	1-249-433-11	CARBON	22K	5%	1/4W	
R98	1-249-421-11	CARBON	2.2K	5%	1/4W	
R99	1-249-425-11	CARBON	4.7K	5%	1/4W	
R100	1-249-435-11	CARBON	33K	5%	1/4W	
R101	1-249-405-11	CARBON	100	5%	1/4W	
R102	1-249-441-11	CARBON	100K	5%	1/4W	
R103	1-249-417-11	CARBON	1K	5%	1/4W	
R104	1-249-441-11	CARBON	100K	5%	1/4W	
R105	1-249-429-11	CARBON	10K	5%	1/4W	
R106	1-249-425-11	CARBON	4.7K	5%	1/4W	
R107	1-249-433-11	CARBON	22K	5%	1/4W	
R108	1-249-441-11	CARBON	100K	5%	1/4W	
R109	1-249-437-11	CARBON	47K	5%	1/4W	
R110	1-249-441-11	CARBON	100K	5%	1/4W	
R111	1-249-437-11	CARBON	47K	5%	1/4W	
R112	1-247-715-11	CARBON	1.5K	5%	1/4W	F
R113	1-249-405-11	CARBON	100	5%	1/4W	
R114	1-216-489-11	METAL OXIDE	27K	5%	3W	F
R116	1-214-782-71	METAL	160K	1%	1/4W	
R117	1-247-725-11	CARBON	10K	5%	1/4W	F
R118	1-202-730-00	SOLID	8.2M	10%	1/2W	
R119	1-215-432-00	METAL	3K	1%	1/6W	
R120	1-215-432-00	METAL	3K	1%	1/6W	
R121	1-215-475-00	METAL	180K	1%	1/6W	
R122	1-215-475-00	METAL	180K	1%	1/6W	
R123	1-249-429-11	CARBON	10K	5%	1/4W	
R124	1-249-425-11	CARBON	4.7K	5%	1/4W	
R125	1-249-429-11	CARBON	10K	5%	1/4W	
R126	1-249-417-11	CARBON	1K	5%	1/4W	
R127	1-249-407-11	CARBON	150	5%	1/4W	
R128	1-249-407-11	CARBON	150	5%	1/4W	
R129	1-249-429-11	CARBON	10K	5%	1/4W	

<VARIABLE RESISTOR>

RV1 1-230-236-11 RES, ADJ, CERAMIC CARBON 47K

<TRANSFORMER>

T1 1-437-078-00 TRANSFORMER, HORIZONTAL DRIVE
T2 1-437-131-00 TRANSFORMER, DRIVE

<CRYSTAL>

X1 1-577-637-11 VIBRATOR, CERAMIC

****

*1-629-816-11 NA BOARD
****

*1-564-519-11 PLUG, CONNECTOR 4P
*4-337-475-00 HOLDER (D), LED

<CAPACITOR>

C601 1-124-477-11 ELECT 47MF 20% 16V

REF.NO.	PART NO.	DESCRIPTION	REMARK

<DIODE>

D601 8-719-920-05 DIODE SLP281C-50
D602 8-719-812-31 DIODE TLR123

<IC>

IC601 8-741-148-33 IC SBX1483-59

<TRANSISTOR>

Q601 8-729-119-78 TRANSISTOR 2SC2785-HFE

<RESISTOR>

R601	1-249-405-11	CARBON	100	5%	1/4W
R602	1-249-409-11	CARBON	220	5%	1/4W
R603	1-249-409-11	CARBON	220	5%	1/4W
R604	1-249-433-11	CARBON	22K	5%	1/4W
R605	1-249-429-11	CARBON	10K	5%	1/4W

****

*1-629-817-11 NB BOARD
****

*1-564-507-11 PLUG, CONNECTOR 4P
*4-374-987-01 GUIDE, LIGHT
*4-381-686-01 BRACKET (B), BAR, OPTICAL

<CAPACITOR>

C701 1-124-477-11 ELECT 47MF 20% 16V

<IC>

IC701 8-741-139-80 IC BX-1398

****

*1-631-359-11 RC BOARD
****

*1-564-519-11 PLUG, CONNECTOR 4P

<CAPACITOR>

C1	1-163-125-00	CERAMIC CHIP 220PF	5%	50V
C2	1-163-125-00	CERAMIC CHIP 220PF	5%	50V
C3	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C4	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C5	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C6	1-123-306-00	ELECT 47MF	20%	6.3V

<DIODE>

D1 8-719-901-44 DIODE SLP144B
D4 8-719-801-48 DIODE 1SS193
D6 8-719-105-51 DIODE RD3.6M-B1

<IC>

IC1 8-759-631-86 IC M50461-PJT

<COIL>

Rc RCA RCB RCC RCD CF-1

REF.NO.	PART NO.	DESCRIPTION	REMARK
L1	1-408-789-21	INDUCTOR CHIP 100UH	
		<TRANSISTOR>	
Q1	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q2	8-729-271-23	TRANSISTOR 2SC2712	
Q5	8-729-271-23	TRANSISTOR 2SC2712	
Q6	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q7	8-729-271-23	TRANSISTOR 2SC2712	
Q8	8-729-101-07	TRANSISTOR 2SB798-DL	
Q9	8-729-271-23	TRANSISTOR 2SC2712	
		<RESISTOR>	
R1	1-216-017-00	METAL GLAZE 47 5% 1/10W	
R2	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R3	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R4	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R5	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R6	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R10	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R11	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R12	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R13	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R14	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R15	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R16	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R17	1-216-028-00	METAL GLAZE 130 5% 1/10W	
R18	1-216-028-00	METAL GLAZE 130 5% 1/10W	
R19	1-216-028-00	METAL GLAZE 130 5% 1/10W	
R20	1-216-028-00	METAL GLAZE 130 5% 1/10W	
R21	1-216-028-00	METAL GLAZE 130 5% 1/10W	
R22	1-216-028-00	METAL GLAZE 130 5% 1/10W	
R23	1-216-028-00	METAL GLAZE 130 5% 1/10W	
R24	1-216-028-00	METAL GLAZE 130 5% 1/10W	
R25	1-216-028-00	METAL GLAZE 130 5% 1/10W	
R26	1-216-028-00	METAL GLAZE 130 5% 1/10W	
R27	1-216-028-00	METAL GLAZE 130 5% 1/10W	
R28	1-216-028-00	METAL GLAZE 130 5% 1/10W	
R29	1-216-028-00	METAL GLAZE 130 5% 1/10W	
R30	1-216-028-00	METAL GLAZE 130 5% 1/10W	
		<SWITCH>	
S1	1-553-856-00	SWITCH, KEY BOARD	
		<CRYSTAL>	
X1	1-527-476-00	OSCILLATOR, CERAMIC	
		************************	
	*1-631-356-11	RCA BOARD *********	
		<DIODE>	
D5	8-719-938-67	DIODE GL-3EG8	
D6	8-719-938-67	DIODE GL-3EG8	
D7	8-719-938-67	DIODE GL-3EG8	
D8	8-719-938-67	DIODE GL-3EG8	
D9	8-719-938-67	DIODE GL-3EG8	
		************************	

REF.NO.	PART NO.	DESCRIPTION	REMARK
	*1-631-357-11	RCB BOARD *********	
		<DIODE>	
D10	8-719-938-67	DIODE GL-3EG8	
D11	8-719-938-67	DIODE GL-3EG8	
D12	8-719-938-67	DIODE GL-3EG8	
D13	8-719-938-67	DIODE GL-3EG8	
D14	8-719-938-67	DIODE GL-3EG8	
		************************	
	*1-631-358-11	RCC BOARD *********	
		<DIODE>	
D15	8-719-938-67	DIODE GL-3EG8	
D16	8-719-938-67	DIODE GL-3EG8	
		************************	
	*1-631-493-11	RCD BOARD *********	
		<DIODE>	
D1	8-719-938-67	DIODE GL-3EG8	
		************************	
	*1-629-819-11	CF-1 BOARD **********	
	*1-575-136-11	CONNECTOR ASSY, FLAT CABLE	
		<FILTER>	
C1	1-236-164-11	ENCAPSULATED COMPONENT	
C2	1-236-164-11	ENCAPSULATED COMPONENT	
C3	1-236-164-11	ENCAPSULATED COMPONENT	
C4	1-236-101-21	ENCAPSULATED COMPONENT	
C5	1-236-164-11	ENCAPSULATED COMPONENT	
C6	1-236-101-21	ENCAPSULATED COMPONENT	
C7	1-236-164-11	ENCAPSULATED COMPONENT	
C8	1-236-101-21	ENCAPSULATED COMPONENT	
C9	1-236-164-11	ENCAPSULATED COMPONENT	
C10	1-236-164-11	ENCAPSULATED COMPONENT	
C11	1-236-164-11	ENCAPSULATED COMPONENT	
C12	1-236-164-11	ENCAPSULATED COMPONENT	
C13	1-236-164-11	ENCAPSULATED COMPONENT	
C14	1-236-164-11	ENCAPSULATED COMPONENT	
C15	1-236-164-11	ENCAPSULATED COMPONENT	
C16	1-236-164-11	ENCAPSULATED COMPONENT	
C17	1-236-164-11	ENCAPSULATED COMPONENT	
C18	1-236-164-11	ENCAPSULATED COMPONENT	
C19	1-236-164-11	ENCAPSULATED COMPONENT	
C20	1-236-164-11	ENCAPSULATED COMPONENT	
C21	1-236-164-11	ENCAPSULATED COMPONENT	
C22	1-236-101-21	ENCAPSULATED COMPONENT	
C23	1-236-101-21	ENCAPSULATED COMPONENT	
C24	1-236-164-11	ENCAPSULATED COMPONENT	
		************************	

CF-2 CBR CBG CBB

REF.NO.	PART NO.	DESCRIPTION		REMARK
	*1-629-820-11	CF-2 BOARD **********		
	*1-564-505-11	PLUG, CONNECTOR 2P		
	*1-564-514-11	PLUG, CONNECTOR 11P		
	*1-564-528-41	PLUG, CONNECTOR 13P		

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION		REMARK
C1	1-101-821-00	CERAMIC	0.0022MF	500V
C4	1-101-821-00	CERAMIC	0.0022MF	500V
C6	1-101-821-00	CERAMIC	0.0022MF	500V
C8	1-101-821-00	CERAMIC	0.0022MF	500V
C10	1-101-821-00	CERAMIC	0.0022MF	500V

<FILTER>

REF.NO.	PART NO.	DESCRIPTION
C2	1-236-071-11	ENCAPSULATED COMPONENT
C3	1-236-164-11	ENCAPSULATED COMPONENT
C5	1-236-071-11	ENCAPSULATED COMPONENT
C7	1-236-071-11	ENCAPSULATED COMPONENT
C9	1-236-071-11	ENCAPSULATED COMPONENT
C11	1-236-071-11	ENCAPSULATED COMPONENT
C12	1-236-164-11	ENCAPSULATED COMPONENT

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REF.NO.	PART NO.	DESCRIPTION
	*1-629-826-11	CBR BOARD *********
	*1-506-371-00	PIN, CONNECTOR 2P
	*1-508-784-00	PIN, CONNECTOR (5MM PITCH) 1P
	1-526-767-00	SOCKET, PICTURE TUBE
	*1-564-507-11	PLUG, CONNECTOR 4P
	1-575-099-11	LEAD ASSY, SIELD HIGH VOLTAGE

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION		REMARK
C301	1-162-114-00	CERAMIC	0.0047MF	2KV

<COIL>

REF.NO.	PART NO.	DESCRIPTION	
L303	1-408-401-00	INDUCTOR	2.2UH
L304	1-408-159-00	COIL, SPOOK CHOKE	3.3UH
L305	1-408-159-00	COIL, SPOOK CHOKE	3.3UH

<NEON LAMP>

REF.NO.	PART NO.	DESCRIPTION
NL301	1-519-423-11	LAMP, NEON
NL302	1-519-423-11	LAMP, NEON
NL303	1-519-368-21	LAMP, NEON
NL304	1-519-368-21	LAMP, NEON
NL305	1-519-423-11	LAMP, NEON

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION			
R301	1-202-818-00	SOLID	1K	10%	1/2W
R302	1-202-818-00	SOLID	1K	10%	1/2W
R303	1-202-828-11	SOLID	6.8K	10%	1/2W
R306	1-202-838-00	SOLID	100K	10%	1/2W
R307	1-202-535-00	SOLID	27	10%	1/2W
R308	1-202-525-00	SOLID	10	10%	1/2W
R309	1-202-840-00	SOLID	150K	10%	1/2W

<SPARK GAP>

REF.NO.	PART NO.	DESCRIPTION
SG301	1-519-063-99	DISCHARGING GAP

****

REF.NO.	PART NO.	DESCRIPTION
	*1-629-827-11	CBG BOARD *********
	*1-506-371-00	PIN, CONNECTOR 2P
	*1-508-784-00	PIN, CONNECTOR (5MM PITCH) 1P
	1-526-767-00	SOCKET, PICTURE TUBE
	*1-564-507-11	PLUG, CONNECTOR 4P
	1-575-098-11	LEAD ASSY, SIELD HIGH VOLTAGE

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION		REMARK
C401	1-162-114-00	CERAMIC	0.0047MF	2KV

<COIL>

REF.NO.	PART NO.	DESCRIPTION	
L403	1-408-401-00	INDUCTOR	2.2UH
L404	1-408-159-00	COIL, SPOOK CHOKE	3.3UH
L405	1-408-159-00	COIL, SPOOK CHOKE	3.3UH

<NEON LAMP>

REF.NO.	PART NO.	DESCRIPTION
NL401	1-519-423-11	LAMP, NEON
NL402	1-519-423-11	LAMP, NEON
NL403	1-519-368-21	LAMP, NEON
NL404	1-519-368-21	LAMP, NEON
NL405	1-519-423-11	LAMP, NEON

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION			
R401	1-202-818-00	SOLID	1K	10%	1/2W
R402	1-202-818-00	SOLID	1K	10%	1/2W
R403	1-202-828-11	SOLID	6.8K	10%	1/2W
R406	1-202-838-00	SOLID	100K	10%	1/2W
R407	1-202-535-00	SOLID	27	10%	1/2W
R408	1-202-525-00	SOLID	10	10%	1/2W
R409	1-202-840-00	SOLID	150K	10%	1/2W

<SPARK GAP>

REF.NO.	PART NO.	DESCRIPTION
SG401	1-519-063-99	DISCHARGING GAP

****

REF.NO.	PART NO.	DESCRIPTION
	*1-629-828-11	CBB BOARD *********
	*1-506-371-00	PIN, CONNECTOR 2P
	*1-508-784-00	PIN, CONNECTOR (5MM PITCH) 1P
	1-526-767-00	SOCKET, PICTURE TUBE
	*1-564-507-11	PLUG, CONNECTOR 4P
	1-575-097-11	LEAD ASSY, SIELD HIGH VOLTAGE

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION		REMARK
C501	1-162-114-00	CERAMIC	0.0047MF	2KV

<COIL>

REF.NO.	PART NO.	DESCRIPTION	
L503	1-408-401-00	INDUCTOR	2.2UH
L504	1-408-159-00	COIL, SPOOK CHOKE	3.3UH
L505	1-408-159-00	COIL, SPOOK CHOKE	3.3UH

<NEON LAMP>

REF.NO.	PART NO.	DESCRIPTION
NL501	1-519-423-11	LAMP, NEON
NL502	1-519-423-11	LAMP, NEON

CBB **CA(B)**

REF.NO.	PART NO.	DESCRIPTION				REMARK
NL503	1-519-368-21	LAMP, NEON				
NL504	1-519-368-21	LAMP, NEON				
NL505	1-519-423-11	LAMP, NEON				

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
R501	1-202-818-00	SOLID	1K	10%	1/2W	
R502	1-202-818-00	SOLID	1K	10%	1/2W	
R503	1-202-828-11	SOLID	6.8K	10%	1/2W	
R506	1-202-838-00	SOLID	100K	10%	1/2W	
R507	1-202-535-00	SOLID	27	10%	1/2W	
R508	1-202-525-00	SOLID	10	10%	1/2W	
R509	1-202-840-00	SOLID	150K	10%	1/2W	

<SPARK GAP>

REF.NO.	PART NO.	DESCRIPTION
SG501	1-519-063-99	DISCHARGING GAP

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*A-1335-014-A CA (B) BOARD, COMPLETE
****

*1-526-575-00 SOCKET, PLUG 1P
*1-564-507-11 PLUG, CONNECTOR 4P
*1-564-516-11 PLUG, CONNECTOR 13P

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
C30	1-126-101-11	ELECT	100MF	20%	16V	
C31	1-126-101-11	ELECT	100MF	20%	16V	
C32	1-126-233-11	ELECT	22MF	20%	50V	
C33	1-126-233-11	ELECT	22MF	20%	50V	
C34	1-101-004-00	CERAMIC	0.01MF		50V	
C35	1-124-927-11	ELECT	4.7MF	20%	50V	
C36	1-126-101-11	ELECT	100MF	20%	16V	
C37	1-126-233-11	ELECT	22MF	20%	50V	
C38	1-101-004-00	CERAMIC	0.01MF		50V	
C39	1-102-978-00	CERAMIC	220PF	5%	50V	
C40	1-102-978-00	CERAMIC	220PF	5%	50V	
C41	1-102-973-00	CERAMIC	100PF	5%	50V	
C42	1-162-117-00	CERAMIC	100PF	10%	500V	
C43	1-101-004-00	CERAMIC	0.01MF		50V	
C44	1-126-233-11	ELECT	22MF	20%	50V	
C45	1-101-004-00	CERAMIC	0.01MF		50V	
C46	1-126-233-11	ELECT	22MF	20%	50V	
C47	1-126-134-11	ELECT	4.7MF	20%	350V	
C48	1-123-932-00	ELECT	4.7MF	20%	160V	
C49	1-124-798-11	ELECT	1MF	20%	160V	
C50	1-124-798-11	ELECT	1MF	20%	160V	
C51	1-102-050-00	CERAMIC	0.01MF		500V	
C52	1-102-050-00	CERAMIC	0.01MF		500V	
C53	1-124-499-11	ELECT	1MF	20%	50V	
C301	1-124-282-00	ELECT	22MF	20%	16V	
C302	1-124-910-11	ELECT	47MF	20%	50V	
C303	1-126-101-11	ELECT	100MF	20%	16V	
C304	1-126-101-11	ELECT	100MF	20%	16V	
C305	1-126-233-11	ELECT	22MF	20%	50V	
C306	1-102-973-00	CERAMIC	100PF	5%	50V	
C307	1-102-816-00	CERAMIC	120PF	5%	50V	
C308	1-124-799-11	ELECT	2.2MF	20%	160V	
C309	1-124-799-11	ELECT	2.2MF	20%	160V	
C310	1-124-634-11	ELECT	1MF	20%	250V	
C311	1-126-233-11	ELECT	22MF	20%	50V	
C312	1-102-121-00	CERAMIC	0.0022MF	10%	50V	
C313	1-136-165-00	FILM	0.1MF	5%	50V	
C314	1-126-174-51	ELECT	10MF	20%	350V	
C315	1-102-038-00	CERAMIC	0.001MF		500V	
C316	1-102-050-00	CERAMIC	0.01MF		500V	
C317	1-124-768-11	ELECT	4.7MF	20%	50V	
C318	1-101-004-00	CERAMIC	0.01MF		50V	
C319	1-136-165-00	FILM	0.1MF	5%	50V	
C320	1-124-499-11	ELECT	1MF	20%	50V	
C321	1-126-233-11	ELECT	22MF	20%	50V	
C322	1-126-233-11	ELECT	22MF	20%	50V	
C323	1-126-233-11	ELECT	22MF	20%	50V	
C350	1-126-101-11	ELECT	100MF	20%	16V	
C351	1-126-101-11	ELECT	100MF	20%	16V	
C352	1-123-875-11	ELECT	10MF	20%	50V	

<DIODE>

REF.NO.	PART NO.	DESCRIPTION
D30	8-719-911-19	DIODE 1SS119
D31	8-719-901-83	DIODE 1SS83
D32	8-719-901-83	DIODE 1SS83
D33	8-719-911-19	DIODE 1SS119
D34	8-719-911-19	DIODE 1SS119
D35	8-719-900-95	DIODE V09G
D36	8-719-900-95	DIODE V09G
D37	8-719-971-20	DIODE ERC38-06
D38	8-719-110-31	DIODE RD12ES-B2
D39	8-719-901-83	DIODE 1SS83
D301	8-719-901-83	DIODE 1SS83
D303	8-719-109-51	DIODE RD2.0ES-B2
D304	8-719-911-19	DIODE 1SS119
D305	8-719-901-83	DIODE 1SS83
D306	8-719-911-19	DIODE 1SS119
D307	8-719-911-19	DIODE 1SS119
D308	8-719-901-83	DIODE 1SS83
D309	8-719-911-19	DIODE 1SS119
D310	8-719-109-51	DIODE RD2.0ES-B2
D311	8-719-911-19	DIODE 1SS119
D312	8-719-911-19	DIODE 1SS119
D313	8-719-911-19	DIODE 1SS119
D314	8-719-110-36	DIODE RD13ES-B2
D315	8-719-109-66	DIODE RD3.3ES-B2

<IC>

REF.NO.	PART NO.	DESCRIPTION
IC301	8-759-821-61	IC VPH05
IC302	8-759-990-82	IC TL082CP
IC303	8-749-920-88	IC SNY-8C02

<COIL>

REF.NO.	PART NO.	DESCRIPTION	
L301	1-408-880-00	INDUCTOR	0.68UH

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION
Q30	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q31	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q32	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q33	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q34	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q35	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q36	8-729-820-82	TRANSISTOR 2SA1208
Q37	8-729-820-82	TRANSISTOR 2SA1208
Q38	8-729-891-02	TRANSISTOR 2SC2910
Q39	8-729-891-02	TRANSISTOR 2SC2910

CA(B) CA(RG)

REF.NO.	PART NO.	DESCRIPTION				REMARK
Q40	8-729-820-82	TRANSISTOR 2SA1208				
Q41	8-729-903-68	TRANSISTOR 2SD982				
Q42	8-729-801-88	TRANSISTOR 2SA1381				
Q43	8-729-900-36	TRANSISTOR DTC124ES				
Q301	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q302	8-729-140-50	TRANSISTOR 2SC3209LK				
Q303	8-729-801-88	TRANSISTOR 2SA1381				
Q304	8-729-801-88	TRANSISTOR 2SA1381				
Q305	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q306	8-729-140-50	TRANSISTOR 2SC3209LK				
Q307	8-729-801-88	TRANSISTOR 2SA1381				
Q308	8-729-900-63	TRANSISTOR DTA124ES				
Q309	8-729-900-63	TRANSISTOR DTA124ES				
Q310	8-729-900-36	TRANSISTOR DTC124ES				
Q311	8-729-105-74	TRANSISTOR 2SK523-M1				
Q312	8-729-119-78	TRANSISTOR 2SC2785-HFE				
		<RESISTOR>				
R50	1-249-421-11	CARBON	2.2K	5%	1/4W	
R51	1-249-427-11	CARBON	6.8K	5%	1/4W	
R52	1-249-393-11	CARBON	10	5%	1/4W	
R53	1-249-427-11	CARBON	6.8K	5%	1/4W	
R54	1-215-437-00	METAL	4.7K	1%	1/6W	
R55	1-215-439-00	METAL	5.6K	1%	1/6W	
R56	1-215-467-00	METAL	82K	1%	1/6W	
R57	1-249-405-11	CARBON	100	5%	1/4W	
R58	1-249-441-11	CARBON	100K	5%	1/4W	
R59	1-249-429-11	CARBON	10K	5%	1/4W	
R60	1-249-425-11	CARBON	4.7K	5%	1/4W	
R61	1-249-429-11	CARBON	10K	5%	1/4W	
R62	1-249-429-11	CARBON	10K	5%	1/4W	
R63	1-249-421-11	CARBON	2.2K	5%	1/4W	
R64	1-249-425-11	CARBON	4.7K	5%	1/4W	
R65	1-249-425-11	CARBON	4.7K	5%	1/4W	
R66	1-249-417-11	CARBON	1K	5%	1/4W	F
R67	1-249-397-11	CARBON	22	5%	1/4W	
R68	1-249-397-11	CARBON	22	5%	1/4W	F
R69	1-249-397-11	CARBON	22	5%	1/4W	F
R70	1-249-399-11	CARBON	33	5%	1/4W	
R71	1-249-399-11	CARBON	33	5%	1/4W	
R72	1-249-397-11	CARBON	22	5%	1/4W	F
R73	1-249-403-11	CARBON	68	5%	1/4W	
R74	1-249-429-11	CARBON	10K	5%	1/4W	F
R75	1-249-429-11	CARBON	10K	5%	1/4W	F
R76	1-202-719-00	SOLID	1M	10%	1/2W	
R77	1-247-903-00	CARBON	1M	5%	1/4W	
R301	1-215-401-11	METAL	150	1%	1/6W	
R302	1-215-401-11	METAL	150	1%	1/6W	
R303	1-215-461-00	METAL	47K	1%	1/6W	
R304	1-215-469-00	METAL	100K	1%	1/6W	
R305	1-215-469-00	METAL	100K	1%	1/6W	
R306	1-215-471-00	METAL	120K	1%	1/6W	
R307	1-249-421-11	CARBON	2.2K	5%	1/4W	
R308	1-249-403-11	CARBON	68	5%	1/4W	
R309	1-215-429-00	METAL	2.2K	1%	1/6W	
R311	1-249-421-11	CARBON	2.2K	5%	1/4W	
R312	1-215-389-00	METAL	47	1%	1/6W	
R316	1-215-473-00	METAL	150K	1%	1/6W	
R317	1-249-421-11	CARBON	2.2K	5%	1/4W	
R318	1-249-427-11	CARBON	6.8K	5%	1/4W	
R319	1-215-453-00	METAL	22K	1%	1/6W	
R320	1-215-469-00	METAL	100K	1%	1/6W	
R321	1-215-471-00	METAL	120K	1%	1/6W	
R322	1-215-441-00	METAL	6.8K	1%	1/6W	
R323	1-215-481-00	METAL	330K	1%	1/6W	
R324	1-215-433-00	METAL	3.3K	1%	1/6W	
R325	1-249-431-11	CARBON	15K	5%	1/4W	
R326	1-249-431-11	CARBON	15K	5%	1/4W	
R327	1-249-415-11	CARBON	680	5%	1/4W	
R328	1-249-405-11	CARBON	100	5%	1/4W	
R329	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R330	1-215-431-00	METAL	2.7K	1%	1/6W	
R331	1-202-549-00	SOLID	100	5%	1/2W	
R332	1-202-818-00	SOLID	1K	10%	1/2W	
R333	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R334	1-215-469-00	METAL	100K	1%	1/6W	
R335	1-249-429-11	CARBON	10K	5%	1/4W	
R336	1-202-549-00	SOLID	100	5%	1/2W	
R337	1-215-443-00	METAL	8.2K	1%	1/6W	
R338	1-215-435-00	METAL	3.9K	1%	1/6W	
R339	1-249-421-11	CARBON	2.2K	5%	1/4W	
R340	1-215-453-00	METAL	22K	1%	1/6W	
R341	1-215-421-00	METAL	1K	1%	1/6W	
R342	1-249-417-11	CARBON	1K	5%	1/4W	
R343	1-247-903-00	CARBON	1M	5%	1/4W	
R344	1-249-427-11	CARBON	6.8K	5%	1/4W	
R345	1-249-405-11	CARBON	100	5%	1/4W	
R346	1-247-895-00	CARBON	470K	5%	1/4W	
R351	1-215-447-00	METAL	12K	1%	1/6W	
R352	1-249-421-11	CARBON	2.2K	5%	1/4W	
R353	1-249-403-11	CARBON	68	5%	1/4W	F
R354	1-215-457-00	METAL	33K	1%	1/6W	
R356	1-215-457-00	METAL	33K	1%	1/6W	

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*A-1335-015-A CA (RG) BOARD, COMPLETE
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REF.NO.	PART NO.	DESCRIPTION				REMARK
	*1-526-575-00	SOCKET, PLUG 1P				
	*1-564-507-11	PLUG, CONNECTOR 4P				
	*1-564-514-11	PLUG, CONNECTOR 11P				
	*1-564-515-11	PLUG, CONNECTOR 12P				
	*1-564-516-11	PLUG, CONNECTOR 13P				
	*1-568-979-11	CONNECTOR 30P				
	*4-363-404-00	HOLDER, IC				
	4-391-519-01	SHEET (E), INSULATOR				
		<CAPACITOR>				
C1	1-123-875-11	ELECT	10MF	20%	50V	
C2	1-126-101-11	ELECT	100MF	20%	16V	
C3	1-123-875-11	ELECT	10MF	20%	50V	
C4	1-126-101-11	ELECT	100MF	20%	16V	
C5	1-126-233-11	ELECT	22MF	20%	50V	
C6	1-126-101-11	ELECT	100MF	20%	16V	
C7	1-126-233-11	ELECT	22MF	20%	50V	
C8	1-102-820-00	CERAMIC	330PF	5%	50V	
C9	1-101-880-00	CERAMIC	47PF	5%	50V	
C10	1-101-004-00	CERAMIC	0.01MF		50V	
C11	1-101-004-00	CERAMIC	0.01MF		50V	
C12	1-101-004-00	CERAMIC	0.01MF		50V	
C13	1-101-004-00	CERAMIC	0.01MF		50V	
C14	1-126-233-11	ELECT	22MF	20%	50V	
C15	1-102-963-00	CERAMIC	33PF	5%	50V	
C16	1-126-233-11	ELECT	22MF	20%	50V	
C17	1-136-165-00	FILM	0.1MF	5%	50V	
C18	1-136-165-00	FILM	0.1MF	5%	50V	

CA(RG)

REF.NO.	PART NO.	DESCRIPTION				REMARK
C19	1-136-165-00	FILM	0.1MF	5%	50V	
C20	1-136-165-00	FILM	0.1MF	5%	50V	
C21	1-126-233-11	ELECT	22MF	20%	50V	
C22	1-126-103-11	ELECT	470MF	20%	16V	
C101	1-124-282-00	ELECT	22MF	20%	16V	
C102	1-124-477-11	ELECT	47MF	20%	16V	
C103	1-126-101-11	ELECT	100MF	20%	16V	
C104	1-126-101-11	ELECT	100MF	20%	16V	
C105	1-126-233-11	ELECT	22MF	20%	50V	
C106	1-102-973-00	CERAMIC	100PF	5%	50V	
C107	1-102-816-00	CERAMIC	120PF	5%	50V	
C108	1-124-799-11	ELECT	2.2MF	20%	160V	
C109	1-124-799-11	ELECT	2.2MF	20%	160V	
C110	1-124-634-11	ELECT	1MF	20%	250V	
C111	1-126-233-11	ELECT	22MF	20%	50V	
C112	1-102-121-00	CERAMIC	0.0022MF	10%	50V	
C113	1-136-165-00	FILM	0.1MF	5%	50V	
C114	1-126-174-51	ELECT	10MF	20%	350V	
C115	1-102-038-00	CERAMIC	0.001MF		500V	
C116	1-102-050-00	CERAMIC	0.01MF		500V	
C117	1-124-768-11	ELECT	4.7MF	20%	50V	
C118	1-101-004-00	CERAMIC	0.01MF		50V	
C119	1-136-165-00	FILM	0.1MF	5%	50V	
C120	1-124-499-11	ELECT	1MF	20%	50V	
C121	1-126-233-11	ELECT	22MF	20%	50V	
C122	1-126-233-11	ELECT	22MF	20%	50V	
C123	1-126-233-11	ELECT	22MF	20%	50V	
C201	1-124-282-00	ELECT	22MF	20%	16V	
C202	1-126-233-11	ELECT	22MF	20%	50V	
C203	1-126-101-11	ELECT	100MF	20%	16V	
C204	1-126-101-11	ELECT	100MF	20%	16V	
C205	1-126-233-11	ELECT	22MF	20%	50V	
C206	1-102-973-00	CERAMIC	100PF	5%	50V	
C207	1-102-816-00	CERAMIC	120PF	5%	50V	
C208	1-124-799-11	ELECT	2.2MF	20%	160V	
C209	1-124-799-11	ELECT	2.2MF	20%	160V	
C210	1-124-634-11	ELECT	1MF	20%	250V	
C211	1-126-233-11	ELECT	22MF	20%	50V	
C212	1-102-121-00	CERAMIC	0.0022MF	10%	50V	
C213	1-136-165-00	FILM	0.1MF	5%	50V	
C214	1-126-174-51	ELECT	10MF	20%	350V	
C215	1-102-038-00	CERAMIC	0.001MF		500V	
C216	1-102-050-00	CERAMIC	0.01MF		500V	
C217	1-124-768-11	ELECT	4.7MF	20%	50V	
C218	1-101-004-00	CERAMIC	0.01MF		50V	
C219	1-136-165-00	FILM	0.1MF	5%	50V	
C220	1-124-499-11	ELECT	1MF	20%	50V	
C221	1-126-233-11	ELECT	22MF	20%	50V	
C222	1-126-233-11	ELECT	22MF	20%	50V	
C223	1-126-233-11	ELECT	22MF	20%	50V	

<DIODE>

REF.NO.	PART NO.	DESCRIPTION	REMARK
D1	8-719-900-95	DIODE V09G	
D2	8-719-900-95	DIODE V09G	
D3	8-719-109-89	DIODE RD5.6ES-B2	
D4	8-719-911-19	DIODE 1SS119	
D5	8-719-911-19	DIODE 1SS119	
D6	8-719-911-19	DIODE 1SS119	
D7	8-719-911-19	DIODE 1SS119	
D8	8-719-911-19	DIODE 1SS119	
D9	8-719-109-93	DIODE RD6.2ES-B2	
D11	8-719-938-28	DIODE ERA22-06	
D12	8-719-911-19	DIODE 1SS119	
D13	8-719-109-85	DIODE RD5.1ES-B2	
D101	8-719-901-83	DIODE 1SS83	
D103	8-719-109-51	DIODE RD2.0ES-B2	
D104	8-719-911-19	DIODE 1SS119	
D105	8-719-901-83	DIODE 1SS83	
D106	8-719-911-19	DIODE 1SS119	
D107	8-719-911-19	DIODE 1SS119	
D108	8-719-901-83	DIODE 1SS83	
D109	8-719-911-19	DIODE 1SS119	
D110	8-719-109-51	DIODE RD2.0ES-B2	
D111	8-719-911-19	DIODE 1SS119	
D112	8-719-911-19	DIODE 1SS119	
D113	8-719-911-19	DIODE 1SS119	
D114	8-719-110-36	DIODE RD13ES-B2	
D115	8-719-911-19	DIODE 1SS119	
D201	8-719-901-83	DIODE 1SS83	
D203	8-719-109-51	DIODE RD2.0ES-B2	
D204	8-719-911-19	DIODE 1SS119	
D205	8-719-901-83	DIODE 1SS83	
D206	8-719-911-19	DIODE 1SS119	
D207	8-719-911-19	DIODE 1SS119	
D208	8-719-901-83	DIODE 1SS83	
D209	8-719-911-19	DIODE 1SS119	
D210	8-719-109-51	DIODE RD2.0ES-B2	
D211	8-719-911-19	DIODE 1SS119	
D212	8-719-911-19	DIODE 1SS119	
D213	8-719-911-19	DIODE 1SS119	
D214	8-719-110-36	DIODE RD13ES-B2	

<IC>

REF.NO.	PART NO.	DESCRIPTION	REMARK
IC1	8-759-179-12	IC UPC7912H	
IC2	8-759-982-13	IC RC7812FA	
IC3	8-759-982-21	IC RC78L05A	
IC4	8-759-000-01	IC MC74HC4538N	
IC5	8-759-984-55	IC MB675429	
IC6	8-759-202-55	IC TC74HC244P	
IC7	8-759-202-11	IC TC74HC00P	
IC8	8-759-990-82	IC TL082CP	
IC101	8-759-821-61	IC VPH05	
IC102	8-759-990-82	IC TL082CP	
IC103	8-749-920-88	IC SNY-8C02	
IC201	8-759-821-61	IC VPH05	
IC202	8-759-990-82	IC TL082CP	
IC203	8-749-920-88	IC SNY-8C02	

<COIL>

REF.NO.	PART NO.	DESCRIPTION		REMARK
L101	1-408-880-00	INDUCTOR	0.68UH	
L201	1-408-880-00	INDUCTOR	0.68UH	

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q1	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q2	8-729-900-36	TRANSISTOR DTC124ES	
Q3	8-729-900-36	TRANSISTOR DTC124ES	
Q4	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q5	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q6	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q7	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q8	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q9	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q10	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q11	8-729-119-78	TRANSISTOR 2SC2785-HFE	

CA(RG)

REF.NO.	PART NO.	DESCRIPTION				REMARK
Q12	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q13	8-729-119-76	TRANSISTOR 2SA1175-HFE				
Q14	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q15	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q16	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q17	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q18	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q19	8-729-119-76	TRANSISTOR 2SA1175-HFE				
Q101	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q102	8-729-140-50	TRANSISTOR 2SC3209LK				
Q103	8-729-801-88	TRANSISTOR 2SA1381				
Q104	8-729-801-88	TRANSISTOR 2SA1381				
Q105	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q106	8-729-140-50	TRANSISTOR 2SC3209LK				
Q107	8-729-801-88	TRANSISTOR 2SA1381				
Q108	8-729-900-63	TRANSISTOR DTA124ES				
Q109	8-729-900-63	TRANSISTOR DTA124ES				
Q110	8-729-900-36	TRANSISTOR DTC124ES				
Q111	8-729-105-74	TRANSISTOR 2SK523-M1				
Q112	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q113	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q201	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q202	8-729-140-50	TRANSISTOR 2SC3209LK				
Q203	8-729-801-88	TRANSISTOR 2SA1381				
Q204	8-729-801-88	TRANSISTOR 2SA1381				
Q205	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q206	8-729-140-50	TRANSISTOR 2SC3209LK				
Q207	8-729-801-88	TRANSISTOR 2SA1381				
Q208	8-729-900-63	TRANSISTOR DTA124ES				
Q209	8-729-900-63	TRANSISTOR DTA124ES				
Q210	8-729-900-36	TRANSISTOR DTC124ES				
Q211	8-729-105-74	TRANSISTOR 2SK523-M1				
Q212	8-729-119-78	TRANSISTOR 2SC2785-HFE				
		<RESISTOR>				
R1	1-249-405-11	CARBON	100	5%	1/4W	
R2	1-215-437-00	METAL	4.7K	1%	1/6W	
R3	1-249-441-11	CARBON	100K	5%	1/4W	
R4	1-215-449-00	METAL	15K	1%	1/6W	
R5	1-249-405-11	CARBON	100	5%	1/4W	
R6	1-249-438-11	CARBON	56K	5%	1/4W	
R7	1-249-437-11	CARBON	47K	5%	1/4W	
R8	1-249-405-11	CARBON	100	5%	1/4W	
R9	1-215-449-00	METAL	15K	1%	1/6W	
R10	1-215-447-00	METAL	12K	1%	1/6W	
R11	1-249-405-11	CARBON	100	5%	1/4W	
R12	1-249-405-11	CARBON	100	5%	1/4W	
R13	1-249-441-11	CARBON	100K	5%	1/4W	
R14	1-249-423-11	CARBON	3.3K	5%	1/4W	
R15	1-249-397-11	CARBON	22	5%	1/4W	F
R16	1-249-405-11	CARBON	100	5%	1/4W	
R17	1-249-423-11	CARBON	3.3K	5%	1/4W	
R18	1-249-426-11	CARBON	5.6K	5%	1/4W	
R19	1-249-415-11	CARBON	680	5%	1/4W	
R20	1-249-397-11	CARBON	22	5%	1/4W	F
R21	1-249-413-11	CARBON	470	5%	1/4W	
R22	1-215-453-00	METAL	22K	1%	1/6W	
R23	1-215-447-00	METAL	12K	1%	1/6W	
R24	1-215-453-00	METAL	22K	1%	1/6W	
R25	1-215-457-00	METAL	33K	1%	1/6W	
R26	1-249-405-11	CARBON	100	5%	1/4W	
R27	1-249-405-11	CARBON	100	5%	1/4W	
R28	1-215-431-00	METAL	2.7K	1%	1/6W	
R29	1-249-429-11	CARBON	10K	5%	1/4W	
R30	1-215-469-00	METAL	100K	1%	1/6W	
R31	1-249-429-11	CARBON	10K	5%	1/4W	
R32	1-215-443-00	METAL	8.2K	1%	1/6W	
R33	1-215-443-00	METAL	8.2K	1%	1/6W	
R34	1-215-443-00	METAL	8.2K	1%	1/6W	
R35	1-247-887-00	CARBON	220K	5%	1/4W	
R36	1-247-887-00	CARBON	220K	5%	1/4W	
R37	1-247-887-00	CARBON	220K	5%	1/4W	
R38	1-249-441-11	CARBON	100K	5%	1/4W	
R39	1-215-469-00	METAL	100K	1%	1/6W	
R40	1-249-433-11	CARBON	22K	5%	1/4W	
R41	1-215-471-00	METAL	120K	1%	1/6W	
R42	1-249-433-11	CARBON	22K	5%	1/4W	
R43	1-249-405-11	CARBON	100	5%	1/4W	
R101	1-215-401-11	METAL	150	1%	1/6W	
R102	1-215-401-11	METAL	150	1%	1/6W	
R103	1-215-473-00	METAL	150K	1%	1/6W	
R105	1-215-469-00	METAL	100K	1%	1/6W	
R106	1-215-471-00	METAL	120K	1%	1/6W	
R107	1-249-421-11	CARBON	2.2K	5%	1/4W	
R108	1-249-403-11	CARBON	68	5%	1/4W	F
R109	1-215-429-00	METAL	2.2K	1%	1/6W	
R111	1-249-421-11	CARBON	2.2K	5%	1/4W	
R112	1-215-389-00	METAL	47	1%	1/6W	
R116	1-215-473-00	METAL	150K	1%	1/6W	
R117	1-249-421-11	CARBON	2.2K	5%	1/4W	
R118	1-249-427-11	CARBON	6.8K	5%	1/4W	
R119	1-215-453-00	METAL	22K	1%	1/6W	
R120	1-215-469-00	METAL	100K	1%	1/6W	
R121	1-215-471-00	METAL	120K	1%	1/6W	
R122	1-215-441-00	METAL	6.8K	1%	1/6W	
R123	1-215-481-00	METAL	330K	1%	1/6W	
R124	1-215-433-00	METAL	3.3K	1%	1/6W	
R125	1-249-431-11	CARBON	15K	5%	1/4W	
R126	1-249-431-11	CARBON	15K	5%	1/4W	
R127	1-249-415-11	CARBON	680	5%	1/4W	
R128	1-249-405-11	CARBON	100	5%	1/4W	
R129	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R130	1-215-431-00	METAL	2.7K	1%	1/6W	
R131	1-202-549-00	SOLID	100	5%	1/2W	
R132	1-202-818-00	SOLID	1K	10%	1/2W	
R133	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R134	1-249-429-11	CARBON	10K	5%	1/4W	
R135	1-215-469-00	METAL	100K	1%	1/6W	
R136	1-202-549-00	SOLID	100	5%	1/2W	
R137	1-215-443-00	METAL	8.2K	1%	1/6W	
R138	1-215-435-00	METAL	3.9K	1%	1/6W	
R139	1-249-421-11	CARBON	2.2K	5%	1/4W	
R140	1-215-453-00	METAL	22K	1%	1/6W	
R141	1-215-421-00	METAL	1K	1%	1/6W	
R142	1-249-417-11	CARBON	1K	5%	1/4W	
R143	1-247-903-00	CARBON	1M	5%	1/4W	
R144	1-249-427-11	CARBON	6.8K	5%	1/4W	
R145	1-249-405-11	CARBON	100	5%	1/4W	
R146	1-247-895-00	CARBON	470K	5%	1/4W	
R147	1-215-457-00	METAL	33K	1%	1/6W	
R148	1-249-410-11	CARBON	270	5%	1/4W	F
R201	1-215-401-11	METAL	150	1%	1/6W	
R202	1-215-401-11	METAL	150	1%	1/6W	
R203	1-215-461-00	METAL	47K	1%	1/6W	
R204	1-215-469-00	METAL	100K	1%	1/6W	
R205	1-215-469-00	METAL	100K	1%	1/6W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R206	1-215-471-00	METAL	120K	1%	1/6W	
R207	1-249-421-11	CARBON	2.2K	5%	1/4W	
R208	1-249-403-11	CARBON	68	5%	1/4W	F
R209	1-215-429-00	METAL	2.2K	1%	1/6W	
R211	1-249-421-11	CARBON	2.2K	5%	1/4W	
R212	1-215-389-00	METAL	47	1%	1/6W	
R216	1-215-473-00	METAL	150K	1%	1/6W	
R217	1-249-421-11	CARBON	2.2K	5%	1/4W	
R218	1-249-427-11	CARBON	6.8K	5%	1/4W	
R219	1-215-453-00	METAL	22K	1%	1/6W	
R220	1-215-469-00	METAL	100K	1%	1/6W	
R221	1-215-471-00	METAL	120K	1%	1/6W	
R222	1-215-441-00	METAL	6.8K	1%	1/6W	
R223	1-215-481-00	METAL	330K	1%	1/6W	
R224	1-215-433-00	METAL	3.3K	1%	1/6W	
R225	1-249-431-11	CARBON	15K	5%	1/4W	
R226	1-249-431-11	CARBON	15K	5%	1/4W	
R227	1-249-415-11	CARBON	680	5%	1/4W	
R228	1-249-405-11	CARBON	100	5%	1/4W	
R229	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R230	1-215-431-00	METAL	2.7K	1%	1/6W	
R231	1-202-549-00	SOLID	100	5%	1/2W	
R232	1-202-818-00	SOLID	1K	10%	1/2W	
R233	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R234	1-215-469-00	METAL	100K	1%	1/6W	
R235	1-249-429-11	CARBON	10K	5%	1/4W	
R236	1-202-549-00	SOLID	100	5%	1/2W	
R237	1-215-443-00	METAL	8.2K	1%	1/6W	
R238	1-215-435-00	METAL	3.9K	1%	1/6W	
R239	1-249-421-11	CARBON	2.2K	5%	1/4W	
R240	1-215-453-00	METAL	22K	1%	1/6W	
R241	1-215-421-00	METAL	1K	1%	1/6W	
R242	1-249-417-11	CARBON	1K	5%	1/4W	
R243	1-247-903-00	CARBON	1M	5%	1/4W	
R244	1-249-427-11	CARBON	6.8K	5%	1/4W	
R245	1-249-405-11	CARBON	100	5%	1/4W	
R246	1-247-895-00	CARBON	470K	5%	1/4W	

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REF.NO.	PART NO.	DESCRIPTION				REMARK
	*1-629-830-11	DM BOARD ********				
	*1-506-348-99	PIN, CONNECTOR 4P				
	*1-508-742-00	PIN, CONNECTOR 3P				
	*1-564-507-11	PLUG, CONNECTOR 4P				
	*1-564-509-11	PLUG, CONNECTOR 6P				
	*1-564-512-11	PLUG, CONNECTOR 9P				
	*1-564-514-11	PLUG, CONNECTOR 11P				
	*1-564-515-11	PLUG, CONNECTOR 12P				
	*1-564-516-11	PLUG, CONNECTOR 13P				
	*1-568-982-11	CONNECTOR, FEMALE 96P				
	*1-568-985-11	CONNECTOR, FEMALE 64P				

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
C1	1-124-556-11	ELECT	2200MF	20%	16V	
C2	1-124-556-11	ELECT	2200MF	20%	16V	

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
R1	1-215-908-00	METAL OXIDE	33	5%	3W	F
R2	1-215-908-00	METAL OXIDE	33	5%	3W	F
R3	1-216-483-11	METAL OXIDE	2.7K	5%	3W	F
R4	1-216-483-11	METAL OXIDE	2.7K	5%	3W	F
R5	1-216-475-11	METAL OXIDE	120	5%	3W	F

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A-1341-218-A DD BOARD, COMPLETE
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REF.NO.	PART NO.	DESCRIPTION				REMARK
	1-247-895-00	CARBON	470K	5%	1/4W	
	*1-568-984-11	CONNECTOR, MALE 96P				

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
C1	1-124-499-11	ELECT	1MF	20%	50V	
C2	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C3	1-123-875-11	ELECT	10MF	20%	50V	
C4	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V	
C5	1-124-499-11	ELECT	1MF	20%	50V	
C6	1-124-499-11	ELECT	1MF	20%	50V	
C7	1-124-499-11	ELECT	1MF	20%	50V	
C8	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V	
C9	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C10	1-164-232-11	CERAMIC CHIP	0.01MF		50V	
C11	1-124-925-11	ELECT	2.2MF	20%	50V	
C12	1-123-875-11	ELECT	10MF	20%	50V	
C13	1-124-499-11	ELECT	1MF	20%	50V	
C14	1-124-499-11	ELECT	1MF	20%	50V	
C15	1-164-232-11	CERAMIC CHIP	0.01MF		50V	
C16	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V	
C17	1-124-927-11	ELECT	4.7MF	20%	50V	
C18	1-123-875-11	ELECT	10MF	20%	50V	
C19	1-124-120-11	ELECT	220MF	20%	16V	
C20	1-124-120-11	ELECT	220MF	20%	16V	
C21	1-123-875-11	ELECT	10MF	20%	50V	
C22	1-123-875-11	ELECT	10MF	20%	50V	
C23	1-124-499-11	ELECT	1MF	20%	50V	
C24	1-123-875-11	ELECT	10MF	20%	50V	

<IC>

REF.NO.	PART NO.	DESCRIPTION	REMARK
IC1	8-759-300-78	IC HD14538BFP	
IC2	8-759-114-06	IC UPC814G2-1	
IC3	8-752-033-65	IC CXA1158P	
IC4	8-759-114-06	IC UPC814G2-1	

<COIL>

REF.NO.	PART NO.	DESCRIPTION	REMARK
L1	1-459-155-00	COIL (WITH CORE) 45UH	
L2	1-459-155-00	COIL (WITH CORE) 45UH	

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q1	8-729-205-97	TRANSISTOR 2SC3668-Y	
Q2	8-729-205-95	TRANSISTOR 2SA1428Y	
Q3	8-729-904-04	TRANSISTOR FMS2	
Q4	8-729-904-04	TRANSISTOR FMS2	
Q11	8-729-903-82	TRANSISTOR FMW2	
Q12	8-729-920-59	TRANSISTOR IMX2	
Q13	8-729-904-04	TRANSISTOR FMS2	
Q14	8-729-903-10	TRANSISTOR FMW1	
Q15	8-729-920-59	TRANSISTOR IMX2	
Q16	8-729-902-96	TRANSISTOR FMS1	
Q17	8-729-902-96	TRANSISTOR FMS1	
Q18	8-729-902-96	TRANSISTOR FMS1	
Q19	8-729-903-82	TRANSISTOR FMW2	
Q20	8-729-920-59	TRANSISTOR IMX2	
Q21	8-729-903-10	TRANSISTOR FMW1	

DD DE

REF.NO.	PART NO.	DESCRIPTION				REMARK
Q22	8-729-904-04	TRANSISTOR FMS2				
Q23	8-729-920-59	TRANSISTOR IMX2				
Q24	8-729-902-96	TRANSISTOR FMS1				
Q25	8-729-902-96	TRANSISTOR FMS1				
Q26	8-729-902-96	TRANSISTOR FMS1				
Q27	8-729-903-82	TRANSISTOR FMW2				
Q28	8-729-920-59	TRANSISTOR IMX2				
Q29	8-729-903-10	TRANSISTOR FMW1				
Q30	8-729-904-04	TRANSISTOR FMS2				
Q31	8-729-920-59	TRANSISTOR IMX2				
Q32	8-729-902-96	TRANSISTOR FMS1				
Q33	8-729-902-96	TRANSISTOR FMS1				
Q34	8-729-902-96	TRANSISTOR FMS1				
Q35	8-729-920-59	TRANSISTOR IMX2				
Q36	8-729-903-10	TRANSISTOR FMW1				
Q37	8-729-903-10	TRANSISTOR FMW1				

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
R01	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R02	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R03	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R04	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R05	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R06	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R07	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R08	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R09	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R10	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R11	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R12	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R13	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R14	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R15	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R16	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R17	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R18	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R19	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R20	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R21	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R22	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R23	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R24	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R25	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R26	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R27	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R28	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R29	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R30	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R51	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R52	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R53	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R54	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R55	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R56	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R57	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R58	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R59	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R60	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R61	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R62	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R63	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R64	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R65	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R66	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R67	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R68	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R69	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R70	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R71	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R72	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R73	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R74	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R75	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R76	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R77	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R78	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R79	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R80	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R81	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R82	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R83	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R84	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R85	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R86	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R87	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R88	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R89	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R90	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R91	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R92	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R93	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R94	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R95	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R96	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R97	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R98	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R99	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R100	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R101	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R102	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R103	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R104	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R105	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R106	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R107	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R108	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R111	1-247-723-11	CARBON	6.8K	5%	1/4W	

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A-1341-219-A DE BOARD, COMPLETE
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*1-568-984-11 CONNECTOR, MALE 96P

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
C501	1-123-356-00	ELECT	10MF	20%	16V	
C502	1-123-356-00	ELECT	10MF	20%	16V	
C503	1-123-356-00	ELECT	10MF	20%	16V	
C504	1-123-356-00	ELECT	10MF	20%	16V	
C505	1-123-356-00	ELECT	10MF	20%	16V	
C506	1-164-232-11	CERAMIC CHIP	0.01MF		50V	
C507	1-164-232-11	CERAMIC CHIP	0.01MF		50V	
C508	1-164-232-11	CERAMIC CHIP	0.01MF		50V	
C509	1-164-232-11	CERAMIC CHIP	0.01MF		50V	
C510	1-164-232-11	CERAMIC CHIP	0.01MF		50V	

DE

REF.NO.	PART NO.	DESCRIPTION		REMARK
C511	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C512	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C513	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C514	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C515	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C516	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C517	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C518	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C519	1-164-232-11	CERAMIC CHIP 0.01MF		50V
		<CAPACITOR>		
C521	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C501	1-123-356-00	ELECT 10MF	20%	16V
C523	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C524	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C525	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C526	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C527	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C528	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C529	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C530	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C531	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C532	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C533	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C534	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C535	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C536	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C537	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C538	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C539	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C540	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C541	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C542	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C543	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C544	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C545	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C546	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C547	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C548	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C549	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C550	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C551	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C552	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C553	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C554	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C555	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C556	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C557	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C558	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C559	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C560	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C561	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C562	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C563	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C564	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C565	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C566	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C567	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C568	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C569	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C570	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C571	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C572	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C573	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C574	1-164-232-11	CERAMIC CHIP 0.01MF		50V

REF.NO.	PART NO.	DESCRIPTION	REMARK
C575	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C576	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C577	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C578	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C579	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C580	1-164-232-11	CERAMIC CHIP 0.01MF	50V
		<DIODE>	
D501	8-719-900-95	DIODE V09G	
D502	8-719-900-95	DIODE V09G	
		<IC>	
IC501	8-759-304-94	IC HD74HC244FP	
IC502	8-759-304-94	IC HD74HC244FP	
IC503	8-759-304-94	IC HD74HC244FP	
IC504	8-759-304-94	IC HD74HC244FP	
IC505	8-759-304-70	IC HD74HC138FP	
IC506	8-759-304-70	IC HD74HC138FP	
IC507	8-759-304-70	IC HD74HC138FP	
IC508	8-759-304-70	IC HD74HC138FP	
IC509	8-759-304-70	IC HD74HC138FP	
IC510	8-759-995-64	IC MB86023	
IC511	8-759-995-64	IC MB86023	
IC512	8-759-995-64	IC MB86023	
IC513	8-759-995-64	IC MB86023	
IC514	8-759-995-64	IC MB86023	
IC515	8-759-995-64	IC MB86023	
IC516	8-759-995-64	IC MB86023	
IC517	8-759-995-64	IC MB86023	
IC518	8-759-995-64	IC MB86023	
IC519	8-759-995-64	IC MB86023	
IC520	8-759-995-64	IC MB86023	
IC521	8-759-995-64	IC MB86023	
IC522	8-759-995-64	IC MB86023	
IC523	8-759-995-64	IC MB86023	
IC524	8-759-995-64	IC MB86023	
IC525	8-759-995-64	IC MB86023	
IC526	8-759-995-64	IC MB86023	
IC527	8-759-995-64	IC MB86023	
IC528	8-759-995-64	IC MB86023	
IC529	8-759-995-64	IC MB86023	
IC530	8-759-995-64	IC MB86023	
IC531	8-759-995-64	IC MB86023	
IC532	8-759-995-64	IC MB86023	
IC533	8-759-995-64	IC MB86023	
IC534	8-759-995-64	IC MB86023	
IC535	8-759-995-64	IC MB86023	
IC536	8-759-995-64	IC MB86023	
IC537	8-759-147-47	IC UPC-1093T	
IC538	8-759-114-06	IC UPC814G2-1	
IC539	8-759-114-06	IC UPC814G2-1	
IC540	8-759-114-06	IC UPC814G2-1	
IC541	8-759-114-06	IC UPC814G2-1	
IC542	8-759-114-06	IC UPC814G2-1	
IC543	8-759-114-06	IC UPC814G2-1	
		<COIL>	
L501	1-459-155-00	COIL (WITH CORE) 45UH	
L502	1-459-155-00	COIL (WITH CORE) 45UH	

DE

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
R501	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R502	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R503	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R504	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R505	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R506	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R507	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R508	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R509	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R510	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R511	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R512	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R513	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R514	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R515	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R516	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R517	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R518	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R519	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R520	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R521	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R522	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R523	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R524	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R525	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R526	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R527	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R528	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R529	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R530	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R531	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R532	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R533	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R534	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R535	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R536	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R537	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R538	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R539	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R540	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R541	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R542	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R543	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R544	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R545	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R546	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R547	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R548	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R549	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R550	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R551	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R552	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R553	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R554	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R555	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R556	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R557	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R558	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R559	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R560	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R561	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R562	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R563	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R564	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R565	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R566	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R567	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R568	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R569	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R570	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R571	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R572	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R573	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R574	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R575	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R576	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R577	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R578	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R579	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R580	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R581	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R582	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R583	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R584	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R585	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R586	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R587	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R588	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R589	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R590	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R591	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R592	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R593	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R594	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R595	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R596	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R597	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R598	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R599	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R600	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R601	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R602	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R603	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R604	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R605	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R606	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R607	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R608	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R609	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R610	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R611	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R612	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R613	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R614	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R615	1-216-635-11	METAL CHIP	220	0.50%	1/10W	
R616	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R617	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R618	1-216-669-11	METAL CHIP	5.6K	0.50%	1/10W	
R619	1-216-669-11	METAL CHIP	5.6K	0.50%	1/10W	
R620	1-216-669-11	METAL CHIP	5.6K	0.50%	1/10W	
R621	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R622	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W	
R623	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W	
R624	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W	
R625	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R626	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W	
R627	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W	
R628	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R629	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W	
R630	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W	
R631	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W	
R632	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W	
R633	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W	
R634	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W	
R635	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R636	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R637	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R638	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R639	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R640	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R641	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R642	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R643	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R644	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R645	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R646	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R647	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R648	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R649	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R650	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R651	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R652	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R653	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R654	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R655	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R656	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R657	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R658	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R659	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R660	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R661	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R662	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R663	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R664	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R665	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R666	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R667	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R668	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R669	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R670	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R671	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R672	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R673	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R674	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R675	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R676	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R677	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R678	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R679	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R680	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R681	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R682	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R683	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R684	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R685	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R686	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	

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REF.NO.	PART NO.	DESCRIPTION				REMARK
	*A-1341-220-A	EB (R) BOARD, COMPLETE				
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	*1-564-507-11	PLUG, CONNECTOR 4P				
	*1-564-509-11	PLUG, CONNECTOR 6P				
	*1-564-512-11	PLUG, CONNECTOR 9P				
	*4-384-422-01	RETAINER (C), TR				
	4-384-424-01	SHEET (B), INSULATING				
	*4-396-261-01	HOLDER (E), TR				

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION			
C101	1-124-122-11	ELECT	100MF	20%	50V
C102	1-101-004-00	CERAMIC	0.01MF		50V
C103	1-124-120-11	ELECT	220MF	20%	16V
C104	1-124-122-11	ELECT	100MF	20%	50V
C105	1-101-004-00	CERAMIC	0.01MF		50V
C106	1-124-120-11	ELECT	220MF	20%	16V
C107	1-130-479-00	MYLAR	0.0047MF	5%	50V
C108	1-102-002-00	CERAMIC	680PF	10%	500V
C109	1-102-244-00	CERAMIC	220PF	10%	500V
C110	1-126-101-11	ELECT	100MF	20%	16V
C111	1-101-004-00	CERAMIC	0.01MF		50V
C112	1-126-101-11	ELECT	100MF	20%	16V
C113	1-101-004-00	CERAMIC	0.01MF		50V
C114	1-102-002-00	CERAMIC	680PF	10%	500V
C115	1-102-947-00	CERAMIC	10PF	0.5PF	50V
C116	1-126-233-11	ELECT	22MF	20%	50V
C117	1-126-233-11	ELECT	22MF	20%	50V
C118	1-124-912-11	ELECT	330MF	20%	50V
C119	1-124-912-11	ELECT	330MF	20%	50V
C120	1-123-875-11	ELECT	10MF	20%	50V
C121	1-123-875-11	ELECT	10MF	20%	50V
C122	1-130-479-00	MYLAR	0.0047MF	5%	50V
C123	1-101-004-00	CERAMIC	0.01MF		50V
C124	1-101-004-00	CERAMIC	0.01MF		50V
C125	1-101-004-00	CERAMIC	0.01MF		50V
C126	1-101-004-00	CERAMIC	0.01MF		50V

<DIODE>

REF.NO.	PART NO.	DESCRIPTION
D101	8-719-911-19	DIODE 1SS119
D102	8-719-911-19	DIODE 1SS119
D103	8-719-911-19	DIODE 1SS119
D104	8-719-911-19	DIODE 1SS119
D105	8-719-109-85	DIODE RD5.1ES-B2

<IC>

REF.NO.	PART NO.	DESCRIPTION
IC101	8-759-700-69	IC NJM79L12A
IC102	8-759-982-21	IC RC78L05A
IC103	8-759-109-82	IC UPC814C
IC104	8-759-945-58	IC RC4558P

<COIL>

REF.NO.	PART NO.	DESCRIPTION	
L101	1-459-155-00	COIL (WITH CORE)	45UH
L102	1-459-155-00	COIL (WITH CORE)	45UH
L103	1-410-645-31	INDUCTOR	100UH
L104	1-410-645-31	INDUCTOR	100UH

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION
Q101	8-729-304-92	TRANSISTOR 2SB649A
Q102	8-729-304-92	TRANSISTOR 2SB649A

EB(R) EB(G)

REF.NO.	PART NO.	DESCRIPTION				REMARK
Q103	8-729-304-92	TRANSISTOR 2SB649A				
Q104	8-729-306-92	TRANSISTOR 2SD669A				
Q105	8-729-142-74	TRANSISTOR 2SD1977				
Q106	8-729-142-70	TRANSISTOR 2SB1315				
Q107	8-729-900-80	TRANSISTOR DTC114ES				
Q108	8-729-900-80	TRANSISTOR DTC114ES				
Q109	8-729-119-78	TRANSISTOR 2SC2785-HFE				

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
R101	1-215-453-00	METAL	22K	1%	1/6W	
R102	1-215-453-00	METAL	22K	1%	1/6W	
R103	1-215-461-00	METAL	47K	1%	1/6W	
R104	1-215-445-00	METAL	10K	1%	1/6W	
R105	1-214-741-00	METAL	3.3K	1%	1/4W	
R106	1-215-451-00	METAL	18K	1%	1/6W	
R107	1-215-455-00	METAL	27K	1%	1/6W	
R108	1-215-451-00	METAL	18K	1%	1/6W	
R109	1-215-445-00	METAL	10K	1%	1/6W	
R110	1-215-433-00	METAL	3.3K	1%	1/6W	
R111	1-215-445-00	METAL	10K	1%	1/6W	
R112	1-249-429-11	CARBON	10K	5%	1/4W	
R113	1-247-713-11	CARBON	1K	5%	1/4W	
R114	1-215-873-00	METAL OXIDE	4.7K	5%	1W	F
R115	1-215-403-00	METAL	180	1%	1/6W	
R116	1-216-369-00	METAL OXIDE	1	5%	2W	F
R117	1-215-417-00	METAL	680	1%	1/6W	
R118	1-215-445-00	METAL	10K	1%	1/6W	
R119	1-215-393-00	METAL	68	1%	1/6W	
R121	1-247-688-11	CARBON	10	5%	1/4W	F
R122	1-247-688-11	CARBON	10	5%	1/4W	F
R123	1-249-397-11	CARBON	22	5%	1/4W	F
R124	1-249-397-11	CARBON	22	5%	1/4W	F
R125	1-249-381-11	CARBON	1	5%	1/4W	F
R126	1-249-381-11	CARBON	1	5%	1/4W	F
R127	1-215-888-00	METAL OXIDE	220	5%	2W	F
R128	1-215-447-00	METAL	12K	1%	1/6W	
R129	1-215-421-00	METAL	1K	1%	1/6W	
R130	1-249-469-11	CARBON	100K	5%	1/4W	
R131	1-247-700-11	CARBON	100	5%	1/4W	
R132	1-249-438-11	CARBON	56K	5%	1/4W	
R133	1-249-437-11	CARBON	47K	5%	1/4W	
R134	1-249-405-11	CARBON	100	5%	1/4W	
R135	1-249-429-11	CARBON	10K	5%	1/4W	
R136	1-215-447-00	METAL	12K	1%	1/6W	
R137	1-215-415-00	METAL	560	1%	1/6W	
R138	1-215-421-00	METAL	1K	1%	1/6W	
R139	1-215-451-00	METAL	18K	1%	1/6W	

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*A-1341-221-A EB (G) BOARD, COMPLETE
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PART NO.	DESCRIPTION
*1-564-507-11	PLUG, CONNECTOR 4P
*1-564-509-11	PLUG, CONNECTOR 6P
*1-564-512-11	PLUG, CONNECTOR 9P
*4-384-422-01	RETAINER (C), TR
4-384-424-01	SHEET (B), INSULATING
*4-396-261-01	HOLDER (E), TR

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
C201	1-124-122-11	ELECT	100MF	20%	50V	
C202	1-101-004-00	CERAMIC	0.01MF		50V	
C203	1-124-120-11	ELECT	220MF	20%	16V	
C204	1-124-122-11	ELECT	100MF	20%	50V	
C205	1-101-004-00	CERAMIC	0.01MF		50V	
C206	1-124-120-11	ELECT	220MF	20%	16V	
C207	1-130-479-00	MYLAR	0.0047MF	5%	50V	
C208	1-102-002-00	CERAMIC	680PF	10%	500V	
C209	1-102-244-00	CERAMIC	220PF	10%	500V	
C210	1-126-101-11	ELECT	100MF	20%	16V	
C211	1-101-004-00	CERAMIC	0.01MF		50V	
C212	1-126-101-11	ELECT	100MF	20%	16V	
C213	1-101-004-00	CERAMIC	0.01MF		50V	
C214	1-102-002-00	CERAMIC	680PF	10%	500V	
C215	1-102-947-00	CERAMIC	10PF	0.5PF	50V	
C216	1-126-233-11	ELECT	22MF	20%	50V	
C217	1-126-233-11	ELECT	22MF	20%	50V	
C218	1-124-912-11	ELECT	330MF	20%	50V	
C219	1-124-912-11	ELECT	330MF	20%	50V	
C220	1-123-875-11	ELECT	10MF	20%	50V	
C221	1-123-875-11	ELECT	10MF	20%	50V	
C222	1-130-479-00	MYLAR	0.0047MF	5%	50V	
C223	1-101-004-00	CERAMIC	0.01MF		50V	
C224	1-101-004-00	CERAMIC	0.01MF		50V	
C225	1-101-004-00	CERAMIC	0.01MF		50V	
C226	1-101-004-00	CERAMIC	0.01MF		50V	

<DIODE>

REF.NO.	PART NO.	DESCRIPTION
D201	8-719-911-19	DIODE 1SS119
D202	8-719-911-19	DIODE 1SS119
D203	8-719-911-19	DIODE 1SS119
D204	8-719-911-19	DIODE 1SS119
D205	8-719-109-85	DIODE RD5.1ES-B2

<IC>

REF.NO.	PART NO.	DESCRIPTION
IC201	8-759-700-69	IC NJM79L12A
IC202	8-759-982-21	IC RC78L05A
IC203	8-759-109-82	IC UPC814C
IC204	8-759-945-58	IC RC4558P

<COIL>

REF.NO.	PART NO.	DESCRIPTION	
L201	1-459-155-00	COIL (WITH CORE)	45UH
L202	1-459-155-00	COIL (WITH CORE)	45UH
L203	1-410-645-31	INDUCTOR	100UH
L204	1-410-645-31	INDUCTOR	100UH

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION
Q201	8-729-304-92	TRANSISTOR 2SB649A
Q202	8-729-304-92	TRANSISTOR 2SB649A
Q203	8-729-304-92	TRANSISTOR 2SB649A
Q204	8-729-306-92	TRANSISTOR 2SD669A
Q205	8-729-142-74	TRANSISTOR 2SD1977
Q206	8-729-142-70	TRANSISTOR 2SB1315
Q207	8-729-900-80	TRANSISTOR DTC114ES
Q208	8-729-900-80	TRANSISTOR DTC114ES
Q209	8-729-119-78	TRANSISTOR 2SC2785-HFE

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
R201	1-215-453-00	METAL	22K	1%	1/6W	
R202	1-215-453-00	METAL	22K	1%	1/6W	
R203	1-215-461-00	METAL	47K	1%	1/6W	
R204	1-215-445-00	METAL	10K	1%	1/6W	

EB(G) EB(B)

REF.NO.	PART NO.	DESCRIPTION				REMARK
R205	1-214-741-00	METAL	3.3K	1%	1/4W	
R206	1-215-451-00	METAL	18K	1%	1/6W	
R207	1-215-455-00	METAL	27K	1%	1/6W	
R208	1-215-451-00	METAL	18K	1%	1/6W	
R209	1-215-445-00	METAL	10K	1%	1/6W	
R210	1-215-433-00	METAL	3.3K	1%	1/6W	
R211	1-215-445-00	METAL	10K	1%	1/6W	
R212	1-249-429-11	CARBON	10K	5%	1/4W	
R213	1-247-713-11	CARBON	1K	5%	1/4W	
R214	1-215-873-00	METAL OXIDE	4.7K	5%	1W	F
R215	1-215-403-00	METAL	180	1%	1/6W	
R216	1-216-369-00	METAL OXIDE	1	5%	2W	F
R217	1-215-417-00	METAL	680	1%	1/6W	
R218	1-215-445-00	METAL	10K	1%	1/6W	
R219	1-215-393-00	METAL	68	1%	1/6W	
R221	1-247-688-11	CARBON	10	5%	1/4W	F
R222	1-247-688-11	CARBON	10	5%	1/4W	F
R223	1-249-397-11	CARBON	22	5%	1/4W	F
R224	1-249-397-11	CARBON	22	5%	1/4W	F
R225	1-249-381-11	CARBON	1	5%	1/4W	F
R226	1-249-381-11	CARBON	1	5%	1/4W	F
R227	1-215-888-00	METAL OXIDE	220	5%	2W	F
R228	1-215-447-00	METAL	12K	1%	1/6W	
R229	1-215-421-00	METAL	1K	1%	1/6W	
R230	1-249-469-11	CARBON	100K	5%	1/4W	
R231	1-247-700-11	CARBON	100	5%	1/4W	
R232	1-249-438-11	CARBON	56K	5%	1/4W	
R233	1-249-437-11	CARBON	47K	5%	1/4W	
R234	1-249-405-11	CARBON	100	5%	1/4W	
R235	1-249-429-11	CARBON	10K	5%	1/4W	
R236	1-215-447-00	METAL	12K	1%	1/6W	
R237	1-215-415-00	METAL	560	1%	1/6W	
R238	1-215-421-00	METAL	1K	1%	1/6W	
R239	1-215-451-00	METAL	18K	1%	1/6W	

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*A-1341-222-A EB (B) BOARD, COMPLETE
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PART NO.	DESCRIPTION
*1-564-507-11	PLUG, CONNECTOR 4P
*1-564-509-11	PLUG, CONNECTOR 6P
*1-564-512-11	PLUG, CONNECTOR 9P
*4-384-422-01	RETAINER (C), TR
4-384-424-01	SHEET (B), INSULATING
*4-396-261-01	HOLDER (E), TR

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
C301	1-124-122-11	ELECT	100MF	20%	50V	
C302	1-101-004-00	CERAMIC	0.01MF		50V	
C303	1-124-120-11	ELECT	220MF	20%	16V	
C304	1-124-122-11	ELECT	100MF	20%	50V	
C305	1-101-004-00	CERAMIC	0.01MF		50V	
C306	1-124-120-11	ELECT	220MF	20%	16V	
C307	1-130-479-00	MYLAR	0.0047MF	5%	50V	
C308	1-102-002-00	CERAMIC	680PF	10%	500V	
C309	1-102-244-00	CERAMIC	220PF	10%	500V	
C310	1-126-101-11	ELECT	100MF	20%	16V	
C311	1-101-004-00	CERAMIC	0.01MF		50V	
C312	1-126-101-11	ELECT	100MF	20%	16V	
C313	1-101-004-00	CERAMIC	0.01MF		50V	
C314	1-102-002-00	CERAMIC	680PF	10%	500V	
C315	1-102-947-00	CERAMIC	10PF	0.5PF	50V	
C316	1-126-233-11	ELECT	22MF	20%	50V	
C317	1-126-233-11	ELECT	22MF	20%	50V	
C318	1-124-912-11	ELECT	330MF	20%	50V	
C319	1-124-912-11	ELECT	330MF	20%	50V	
C320	1-123-875-11	ELECT	10MF	20%	50V	
C321	1-123-875-11	ELECT	10MF	20%	50V	
C322	1-130-479-00	MYLAR	0.0047MF	5%	50V	
C323	1-101-004-00	CERAMIC	0.01MF		50V	
C324	1-101-004-00	CERAMIC	0.01MF		50V	
C325	1-101-004-00	CERAMIC	0.01MF		50V	
C326	1-101-004-00	CERAMIC	0.01MF		50V	

<DIODE>

REF.NO.	PART NO.	DESCRIPTION
D301	8-719-911-19	DIODE 1SS119
D302	8-719-911-19	DIODE 1SS119
D303	8-719-911-19	DIODE 1SS119
D304	8-719-911-19	DIODE 1SS119
D305	8-719-109-85	DIODE RD5.1ES-B2

<IC>

REF.NO.	PART NO.	DESCRIPTION
IC301	8-759-700-69	IC NJM79L12A
IC302	8-759-982-21	IC RC78L05A
IC303	8-759-109-82	IC UPC814C
IC304	8-759-945-58	IC RC4558P

<COIL>

REF.NO.	PART NO.	DESCRIPTION	
L301	1-459-155-00	COIL (WITH CORE)	45UH
L302	1-459-155-00	COIL (WITH CORE)	45UH
L303	1-410-645-31	INDUCTOR	100UH
L304	1-410-645-31	INDUCTOR	100UH

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION
Q301	8-729-304-92	TRANSISTOR 2SB649A
Q302	8-729-304-92	TRANSISTOR 2SB649A
Q303	8-729-304-92	TRANSISTOR 2SB649A
Q304	8-729-306-92	TRANSISTOR 2SD669A
Q305	8-729-142-74	TRANSISTOR 2SD1977
Q306	8-729-142-70	TRANSISTOR 2SB1315
Q307	8-729-900-80	TRANSISTOR DTC114ES
Q308	8-729-900-80	TRANSISTOR DTC114ES
Q309	8-729-119-78	TRANSISTOR 2SC2785-HFE

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
R301	1-215-453-00	METAL	22K	1%	1/6W	
R302	1-215-453-00	METAL	22K	1%	1/6W	
R303	1-215-461-00	METAL	47K	1%	1/6W	
R304	1-215-445-00	METAL	10K	1%	1/6W	
R305	1-214-741-00	METAL	3.3K	1%	1/4W	
R306	1-215-451-00	METAL	18K	1%	1/6W	
R307	1-215-455-00	METAL	27K	1%	1/6W	
R308	1-215-451-00	METAL	18K	1%	1/6W	
R309	1-215-445-00	METAL	10K	1%	1/6W	
R310	1-215-433-00	METAL	3.3K	1%	1/6W	
R311	1-215-445-00	METAL	10K	1%	1/6W	
R312	1-249-429-11	CARBON	10K	5%	1/4W	
R313	1-247-713-11	CARBON	1K	5%	1/4W	
R314	1-215-873-00	METAL OXIDE	4.7K	5%	1W	F
R315	1-215-403-00	METAL	180	1%	1/6W	
R316	1-216-369-00	METAL OXIDE	1	5%	2W	F
R317	1-215-417-00	METAL	680	1%	1/6W	
R318	1-215-445-00	METAL	10K	1%	1/6W	

EB(B) DA

REF.NO.	PART NO.	DESCRIPTION				REMARK
R319	1-215-393-00	METAL	68	1%	1/6W	
R321	1-247-688-11	CARBON	10	5%	1/4W	F
R322	1-247-688-11	CARBON	10	5%	1/4W	F
R323	1-249-397-11	CARBON	22	5%	1/4W	F
R324	1-249-397-11	CARBON	22	5%	1/4W	F
R325	1-249-381-11	CARBON	1	5%	1/4W	F
R326	1-249-381-11	CARBON	1	5%	1/4W	F
R327	1-215-888-00	METAL OXIDE	220	5%	2W	F
R328	1-215-447-00	METAL	12K	1%	1/6W	
R329	1-215-421-00	METAL	1K	1%	1/6W	
R330	1-249-469-11	CARBON	100K	5%	1/4W	
R331	1-247-700-11	CARBON	100	5%	1/4W	
R332	1-249-438-11	CARBON	56K	5%	1/4W	
R333	1-249-437-11	CARBON	47K	5%	1/4W	
R334	1-249-405-11	CARBON	100	5%	1/4W	
R335	1-249-429-11	CARBON	10K	5%	1/4W	
R336	1-215-447-00	METAL	12K	1%	1/6W	
R337	1-215-415-00	METAL	560	1%	1/6W	
R338	1-215-421-00	METAL	1K	1%	1/6W	
R339	1-215-451-00	METAL	18K	1%	1/6W	

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*A-1345-875-A DA BOARD, COMPLETE

*1-568-984-11 CONNECTOR, MALE 96P

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
C1	1-123-875-11	ELECT	10MF	20%	50V	
C2	1-126-101-11	ELECT	100MF	20%	16V	
C3	1-123-875-11	ELECT	10MF	20%	50V	
C4	1-126-101-11	ELECT	100MF	20%	16V	
C5	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C6	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C7	1-124-499-11	ELECT	1MF	20%	50V	
C8	1-136-153-00	FILM	0.01MF	5%	50V	
C9	1-124-499-11	ELECT	1MF	20%	50V	
C10	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C11	1-123-875-11	ELECT	10MF	20%	50V	
C12	1-124-499-11	ELECT	1MF	20%	50V	
C13	1-136-153-00	FILM	0.01MF	5%	50V	
C14	1-163-101-00	CERAMIC CHIP	22PF	5%	50V	
C15	1-123-875-11	ELECT	10MF	20%	50V	
C16	1-124-499-11	ELECT	1MF	20%	50V	
C17	1-136-153-00	FILM	0.01MF	5%	50V	
C18	1-124-925-11	ELECT	2.2MF	20%	50V	
C19	1-124-499-11	ELECT	1MF	20%	50V	
C20	1-163-109-00	CERAMIC CHIP	47PF	5%	50V	
C21	1-123-875-11	ELECT	10MF	20%	50V	
C22	1-124-499-11	ELECT	1MF	20%	50V	
C23	1-136-153-00	FILM	0.01MF	5%	50V	
C24	1-124-925-11	ELECT	2.2MF	20%	50V	
C25	1-124-499-11	ELECT	1MF	20%	50V	
C26	1-163-101-00	CERAMIC CHIP	22PF	5%	50V	
C28	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C29	1-123-875-11	ELECT	10MF	20%	50V	
C30	1-124-499-11	ELECT	1MF	20%	50V	
C31	1-123-875-11	ELECT	10MF	20%	50V	
C32	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C33	1-123-875-11	ELECT	10MF	20%	50V	
C34	1-124-499-11	ELECT	1MF	20%	50V	
C35	1-124-477-11	ELECT	47MF	20%	16V	
C36	1-124-499-11	ELECT	1MF	20%	50V	

REF.NO.	PART NO.	DESCRIPTION			REMARK
C37	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C38	1-123-875-11	ELECT	10MF	20%	50V
C39	1-124-499-11	ELECT	1MF	20%	50V
C40	1-124-499-11	ELECT	1MF	20%	50V
C41	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C42	1-124-927-11	ELECT	4.7MF	20%	50V
C43	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C44	1-130-471-00	MYLAR	0.001MF	5%	50V
C45	1-123-875-11	ELECT	10MF	20%	50V
C46	1-124-925-11	ELECT	2.2MF	20%	50V
C47	1-123-875-11	ELECT	10MF	20%	50V
C48	1-124-925-11	ELECT	2.2MF	20%	50V
C49	1-136-153-00	FILM	0.01MF	5%	50V
C50	1-123-875-11	ELECT	10MF	20%	50V
C53	1-123-875-11	ELECT	10MF	20%	50V
C54	1-124-927-11	ELECT	4.7MF	20%	50V
C55	1-130-471-00	MYLAR	0.001MF	5%	50V
C56	1-130-471-00	FILM	0.001MF	5%	50V
C57	1-136-165-00	FILM	0.1MF	5%	50V
C58	1-124-119-00	ELECT	330MF	20%	16V
C59	1-124-120-11	ELECT	220MF	20%	16V
C60	1-124-925-11	ELECT	2.2MF	20%	50V
C61	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C62	1-124-925-11	ELECT	2.2MF	20%	50V
C63	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C71	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C72	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C73	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C74	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C75	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C76	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C79	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C81	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C82	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C83	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C84	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C85	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C86	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C87	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C88	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C89	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C90	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C91	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C92	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C93	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C94	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C95	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C156	1-123-875-11	ELECT	10MF	20%	50V
C158	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C201	1-123-875-11	ELECT	10MF	20%	50V
C202	1-136-153-00	FILM	0.01MF	5%	50V
C203	1-136-165-00	FILM	0.1MF	5%	50V
C204	1-124-927-11	ELECT	4.7MF	20%	50V
C205	1-124-499-11	ELECT	1MF	20%	50V
C206	1-124-499-11	ELECT	1MF	20%	50V
C207	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C208	1-124-499-11	ELECT	1MF	20%	50V
C209	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C210	1-123-875-11	ELECT	10MF	20%	50V
C211	1-124-477-11	ELECT	47MF	20%	16V
C212	1-126-233-11	ELECT	22MF	20%	50V
C213	1-124-925-11	ELECT	2.2MF	20%	50V
C214	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C215	1-124-925-11	ELECT	2.2MF	20%	50V

REF.NO.	PART NO.	DESCRIPTION			REMARK
C216	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C217	1-123-875-11	ELECT	10MF	20%	50V
C218	1-124-927-11	ELECT	4.7MF	20%	50V
C219	1-124-925-11	ELECT	2.2MF	20%	50V
C220	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C221	1-124-925-11	ELECT	2.2MF	20%	50V
C222	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C223	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C224	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C231	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C232	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C233	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C234	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C235	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C236	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C237	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C238	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C239	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C240	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C241	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C242	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C243	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C244	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C245	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C246	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C247	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C248	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C249	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C252	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C253	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C254	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C255	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C256	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C257	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C258	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C259	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C260	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C261	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C262	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C263	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C264	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C265	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C266	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C401	1-126-101-11	ELECT	100MF	20%	16V
C402	1-126-101-11	ELECT	100MF	20%	16V
C403	1-123-875-11	ELECT	10MF	20%	50V
C405	1-123-875-11	ELECT	10MF	20%	50V
		<DIODE>			
D1	8-719-900-95	DIODE V09G			
D2	8-719-900-95	DIODE V09G			
D3	8-719-400-18	DIODE MA152WK			
D4	8-719-400-18	DIODE MA152WK			
D5	8-719-938-28	DIODE ERA22-06			
D6	8-719-106-71	DIODE RD12M-B2			
D7	8-719-106-53	DIODE RD10M-B2			
D8	8-719-400-18	DIODE MA152WK			
D9	8-719-104-34	DIODE 1S2836			
D201	8-719-800-76	DIODE 1SS226			
D202	8-719-400-18	DIODE MA152WK			
D203	8-719-400-18	DIODE MA152WK			
D204	8-719-400-18	DIODE MA152WK			
D205	8-719-800-76	DIODE 1SS226			

REF.NO.	PART NO.	DESCRIPTION	REMARK
D206	8-719-400-18	DIODE MA152WK	
D207	8-719-400-18	DIODE MA152WK	
D208	8-719-400-18	DIODE MA152WK	
		<IC>	
IC1	8-759-604-39	IC M5F78M12	
IC2	8-759-700-69	IC NJM79L12A	
IC3	8-759-300-78	IC HD14538BFP	
IC4	8-759-100-96	IC UPC4558G2	
IC5	8-759-300-78	IC HD14538BFP	
IC6	8-759-100-96	IC UPC4558G2	
IC8	8-759-100-93	IC UPC393G2	
IC9	8-759-300-78	IC HD14538BFP	
IC10	8-759-114-06	IC UPC814G2-1	
IC11	8-759-300-78	IC HD14538BFP	
IC12	8-759-114-06	IC UPC814G2-1	
IC13	8-759-300-78	IC HD14538BFP	
IC14	8-749-920-80	IC SBX4011-01	
IC15	8-759-100-96	IC UPC4558G2	
IC16	8-759-114-06	IC UPC814G2-1	
IC17	8-759-300-71	IC HD14053BFP	
IC201	8-752-033-65	IC CXA1158P	
IC202	8-759-304-42	IC HD74HC04FP	
IC203	8-759-114-06	IC UPC814G2-1	
IC204	8-759-114-06	IC UPC814G2-1	
IC205	8-759-114-06	IC UPC814G2-1	
IC206	8-759-114-06	IC UPC814G2-1	
IC207	8-759-114-06	IC UPC814G2-1	
IC208	8-759-100-96	IC UPC4558G2	
IC209	8-759-100-96	IC UPC4558G2	
IC210	8-759-300-71	IC HD14053BFP	
IC211	8-759-100-96	IC UPC4558G2	
IC213	8-759-114-06	IC UPC814G2-1	
IC214	8-759-114-06	IC UPC814G2-1	
IC215	8-759-114-06	IC UPC814G2-1	
IC217	8-759-114-06	IC UPC814G2-1	
IC218	8-759-300-71	IC HD14053BFP	
IC219	8-759-114-06	IC UPC814G2-1	
IC220	8-759-114-06	IC UPC814G2-1	
IC221	8-759-304-70	IC HD74HC138FP	
IC401	8-759-100-93	IC UPC393G2	
		<COIL>	
L1	1-459-155-00	COIL (WITH CORE) 45UH	
L2	1-459-155-00	COIL (WITH CORE) 45UH	
L401	1-459-155-00	COIL (WITH CORE) 45UH	
L402	1-459-155-00	COIL (WITH CORE) 45UH	
		<TRANSISTOR>	
Q1	8-729-271-23	TRANSISTOR 2SC2712	
Q2	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q3	8-729-271-23	TRANSISTOR 2SC2712	
Q4	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q5	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q6	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q7	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q8	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q9	8-729-271-23	TRANSISTOR 2SC2712	
Q10	8-729-271-23	TRANSISTOR 2SC2712	
Q11	8-729-105-72	TRANSISTOR 2SK523-L1	

DA

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q12	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q13	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q14	8-729-271-23	TRANSISTOR 2SC2712	
Q15	8-729-271-23	TRANSISTOR 2SC2712	
Q16	8-729-271-23	TRANSISTOR 2SC2712	
Q17	8-729-903-82	TRANSISTOR FMW2	
Q18	8-729-920-59	TRANSISTOR IMX2	
Q19	8-729-904-04	TRANSISTOR FMS2	
Q20	8-729-903-10	TRANSISTOR FMW1	
Q21	8-729-903-10	TRANSISTOR FMW1	
Q22	8-729-920-59	TRANSISTOR IMX2	
Q23	8-729-271-23	TRANSISTOR 2SC2712	
Q24	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q25	8-729-901-01	TRANSISTOR DTC144EK	
Q26	8-729-901-01	TRANSISTOR DTC144EK	
Q27	8-729-901-01	TRANSISTOR DTC144EK	
Q28	8-729-271-23	TRANSISTOR 2SC2712	
Q29	8-729-901-01	TRANSISTOR DTC144EK	
Q30	8-729-901-01	TRANSISTOR DTC144EK	
Q31	8-729-903-10	TRANSISTOR FMW1	
Q201	8-729-271-23	TRANSISTOR 2SC2712	
Q202	8-729-271-23	TRANSISTOR 2SC2712	
Q203	8-729-271-23	TRANSISTOR 2SC2712	
Q204	8-729-271-23	TRANSISTOR 2SC2712	
Q205	8-729-903-82	TRANSISTOR FMW2	
Q206	8-729-920-59	TRANSISTOR IMX2	
Q207	8-729-904-04	TRANSISTOR FMS2	
Q208	8-729-903-10	TRANSISTOR FMW1	
Q209	8-729-903-10	TRANSISTOR FMW1	
Q210	8-729-920-59	TRANSISTOR IMX2	
Q211	8-729-271-23	TRANSISTOR 2SC2712	
Q212	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q213	8-729-903-82	TRANSISTOR FMW2	
Q214	8-729-920-59	TRANSISTOR IMX2	
Q215	8-729-904-04	TRANSISTOR FMS2	
Q216	8-729-903-10	TRANSISTOR FMW1	
Q217	8-729-903-10	TRANSISTOR FMW1	
Q218	8-729-920-59	TRANSISTOR IMX2	
Q219	8-729-271-23	TRANSISTOR 2SC2712	
Q220	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q221	8-729-271-23	TRANSISTOR 2SC2712	
Q222	8-729-902-96	TRANSISTOR FMS1	
Q223	8-729-271-23	TRANSISTOR 2SC2712	
Q224	8-729-902-96	TRANSISTOR FMS1	
Q225	8-729-271-23	TRANSISTOR 2SC2712	
Q226	8-729-903-10	TRANSISTOR FMW1	
Q227	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q228	8-729-903-10	TRANSISTOR FMW1	
Q229	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q230	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q231	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q401	8-729-205-97	TRANSISTOR 2SC3668-Y	
Q402	8-729-205-95	TRANSISTOR 2SA1428Y	

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
R1	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R2	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R3	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R4	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R5	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R6	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R7	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R8	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R9	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R10	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R11	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R12	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R13	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R14	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R15	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R16	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R17	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R18	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R19	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R20	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R21	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R22	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R23	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R24	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R25	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R26	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R29	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R30	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R31	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R32	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R33	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R34	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R35	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R36	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R39	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R41	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R42	1-216-673-11	METAL CHIP	8.2K	0.50%	1/10W	
R43	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R46	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R47	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R49	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R50	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R51	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R52	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R53	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R54	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R55	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R56	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R57	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R58	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R59	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R60	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R61	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R62	1-216-669-11	METAL CHIP	5.6K	0.50%	1/10W	
R63	1-216-099-00	METAL GLAZE	120K	5%	1/10W	
R64	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R65	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R66	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R67	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R68	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R69	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R70	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R71	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R72	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R73	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R74	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R75	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R76	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R77	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R78	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R79	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	

REF.NO.	PART NO.	DESCRIPTION	REMARK
R80	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R81	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R82	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R83	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R84	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R85	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R86	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R87	1-216-101-00	METAL GLAZE 150K 5% 1/10W	
R88	1-216-095-00	METAL GLAZE 82K 5% 1/10W	
R89	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R90	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R91	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R92	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R93	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R94	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R95	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R96	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R97	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R99	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R100	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R101	1-216-075-00	METAL GLAZE 12K 5% 1/10W	
R102	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R103	1-216-101-00	METAL GLAZE 150K 5% 1/10W	
R104	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R105	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R106	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R107	1-216-667-11	METAL CHIP 4.7K 0.50% 1/10W	
R108	1-216-679-11	METAL CHIP 15K 0.50% 1/10W	
R109	1-216-673-11	METAL CHIP 8.2K 0.50% 1/10W	
R110	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R111	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R112	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R113	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R114	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R115	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R116	1-216-047-00	METAL GLAZE 820 5% 1/10W	
R117	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R118	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R119	1-216-669-11	METAL CHIP 5.6K 0.50% 1/10W	
R120	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R121	1-216-748-11	METAL GLAZE 39K 5% 1/10W	
R122	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
R123	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R124	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R125	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R126	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R127	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R128	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R129	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R130	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R131	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R132	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R133	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R134	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R135	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R136	1-216-748-11	METAL GLAZE 39K 5% 1/10W	
R137	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
R138	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R139	1-216-083-00	METAL GLAZE 27K 5% 1/10W	
R140	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R141	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R142	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R143	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R144	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R145	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R146	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R147	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R148	1-216-075-00	METAL GLAZE 12K 5% 1/10W	
R150	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R151	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R152	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R153	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R154	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R155	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R156	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R157	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R158	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R159	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R160	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R161	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R163	1-216-679-11	METAL CHIP 15K 0.50% 1/10W	
R164	1-216-655-11	METAL CHIP 1.5K 0.50% 1/10W	
R165	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R168	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R169	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R170	1-216-075-00	METAL GLAZE 12K 5% 1/10W	
R171	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R199	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R201	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R203	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R204	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R205	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R206	1-216-699-11	METAL CHIP 100K 0.50% 1/10W	
R207	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R208	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R209	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R210	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R211	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R212	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R213	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R214	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R215	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R216	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R217	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R218	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R219	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R220	1-216-101-00	METAL GLAZE 150K 5% 1/10W	
R221	1-216-699-11	METAL CHIP 100K 0.50% 1/10W	
R222	1-216-683-11	METAL CHIP 22K 0.50% 1/10W	
R223	1-216-101-00	METAL GLAZE 150K 5% 1/10W	
R224	1-216-093-00	METAL GLAZE 68K 5% 1/10W	
R225	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R226	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R227	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R228	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R229	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R230	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R231	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R232	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R233	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R234	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R235	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R236	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R237	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R238	1-216-659-11	METAL CHIP 2.2K 0.50% 1/10W	
R239	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R240	1-216-025-00	METAL GLAZE 100 5% 1/10W	

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REF.NO.	PART NO.	DESCRIPTION				REMARK
R241	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R242	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R243	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R244	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R245	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R246	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R247	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R248	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R249	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R250	1-216-641-11	METAL CHIP	390	0.50%	1/10W	
R251	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R252	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R253	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R254	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R255	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R256	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R257	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R258	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R259	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R260	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R261	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R262	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R263	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R264	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R265	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R266	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R267	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R268	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R269	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R270	1-216-639-11	METAL CHIP	330	0.50%	1/10W	
R271	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R272	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R273	1-216-639-11	METAL CHIP	330	0.50%	1/10W	
R274	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R275	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R276	1-216-615-11	METAL CHIP	33	0.50%	1/10W	
R277	1-216-615-11	METAL CHIP	33	0.50%	1/10W	
R278	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R279	1-216-639-11	METAL CHIP	330	0.50%	1/10W	
R280	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R281	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R282	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R283	1-216-661-11	METAL CHIP	2.7K	0.50%	1/10W	
R284	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R285	1-216-655-11	METAL CHIP	1.5K	0.50%	1/10W	
R286	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R287	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R288	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R289	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R290	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R291	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R292	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R293	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R294	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R295	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R296	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R297	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R298	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R299	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R300	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R301	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R302	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R303	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R304	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R305	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R306	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R307	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R308	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R309	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R310	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R311	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R312	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R313	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R314	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R315	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R316	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R317	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R318	1-216-639-11	METAL CHIP	330	0.50%	1/10W	
R319	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R320	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R321	1-216-639-11	METAL CHIP	330	0.50%	1/10W	
R322	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R323	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R324	1-216-615-11	METAL CHIP	33	0.50%	1/10W	
R325	1-216-615-11	METAL CHIP	33	0.50%	1/10W	
R326	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R327	1-216-639-11	METAL CHIP	330	0.50%	1/10W	
R328	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R329	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R330	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R331	1-216-661-11	METAL CHIP	2.7K	0.50%	1/10W	
R332	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R333	1-216-655-11	METAL CHIP	1.5K	0.50%	1/10W	
R334	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R335	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R336	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R337	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R338	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R339	1-216-697-11	METAL CHIP	82K	0.50%	1/10W	
R340	1-216-687-11	METAL CHIP	33K	0.50%	1/10W	
R341	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R342	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R343	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R344	1-216-697-11	METAL CHIP	82K	0.50%	1/10W	
R345	1-216-687-11	METAL CHIP	33K	0.50%	1/10W	
R346	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R347	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R348	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R349	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R350	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R351	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R352	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R353	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R354	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R356	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R357	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R358	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R359	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R360	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R361	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R362	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R363	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R364	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R365	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R366	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R367	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R368	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	

DA DB

REF.NO.	PART NO.	DESCRIPTION	REMARK
R369	1-216-659-11	METAL CHIP 2.2K 0.50% 1/10W	
R370	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R401	1-216-017-00	METAL GLAZE 47 5% 1/10W	
R402	1-216-017-00	METAL GLAZE 47 5% 1/10W	
R403	1-216-685-11	METAL CHIP 27K 0.50% 1/10W	
R404	1-216-693-11	METAL CHIP 56K 0.50% 1/10W	
R405	1-216-677-11	METAL CHIP 12K 0.50% 1/10W	
R406	1-216-675-11	METAL CHIP 10K 0.50% 1/10W	
R407	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R408	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R409	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R410	1-216-679-11	METAL CHIP 15K 0.50% 1/10W	
R411	1-216-693-11	METAL CHIP 56K 0.50% 1/10W	
R412	1-216-677-11	METAL CHIP 12K 0.50% 1/10W	
R413	1-216-675-11	METAL CHIP 10K 0.50% 1/10W	
R414	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R415	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R416	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R417	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R418	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R419	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R420	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R421	1-216-049-00	METAL GLAZE 1K 5% 1/10W	

<VARIABLE RESISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
RV1	1-237-502-21	RES, ADJ, CERMET 5K	
RV2	1-237-503-21	RES, ADJ, CERMET 10K	
RV3	1-237-502-21	RES, ADJ, CERMET 5K	

<SWITCH>

REF.NO.	PART NO.	DESCRIPTION	REMARK
S1	1-570-204-21	SWITCH, KEY BOARD	
S2	1-570-204-21	SWITCH, KEY BOARD	

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*A-1345-906-A DB BOARD, COMPLETE
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*1-568-984-11 CONNECTOR, MALE 96P

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
C501	1-123-356-00	ELECT 10MF 20% 16V	
C502	1-123-356-00	ELECT 10MF 20% 16V	
C503	1-123-356-00	ELECT 10MF 20% 16V	
C504	1-123-356-00	ELECT 10MF 20% 16V	
C505	1-123-356-00	ELECT 10MF 20% 16V	
C506	1-164-232-11	CERAMIC CHIP 0.01MF 50V	
C507	1-164-232-11	CERAMIC CHIP 0.01MF 50V	
C508	1-164-232-11	CERAMIC CHIP 0.01MF 50V	
C509	1-164-232-11	CERAMIC CHIP 0.01MF 50V	
C510	1-164-232-11	CERAMIC CHIP 0.01MF 50V	
C511	1-164-232-11	CERAMIC CHIP 0.01MF 50V	
C512	1-164-232-11	CERAMIC CHIP 0.01MF 50V	
C513	1-164-232-11	CERAMIC CHIP 0.01MF 50V	
C514	1-164-232-11	CERAMIC CHIP 0.01MF 50V	
C515	1-164-232-11	CERAMIC CHIP 0.01MF 50V	
C516	1-164-232-11	CERAMIC CHIP 0.01MF 50V	
C517	1-164-232-11	CERAMIC CHIP 0.01MF 50V	
C518	1-164-232-11	CERAMIC CHIP 0.01MF 50V	
C519	1-164-232-11	CERAMIC CHIP 0.01MF 50V	
C520	1-164-232-11	CERAMIC CHIP 0.01MF 50V	
C521	1-164-232-11	CERAMIC CHIP 0.01MF 50V	

REF.NO.	PART NO.	DESCRIPTION	REMARK
C522	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C523	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C524	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C525	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C526	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C527	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C528	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C529	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C530	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C531	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C532	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C533	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C534	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C535	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C536	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C537	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C538	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C539	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C540	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C541	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C542	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C543	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C544	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C545	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C546	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C547	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C548	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C549	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C550	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C551	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C552	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C553	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C554	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C555	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C556	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C557	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C558	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C559	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C560	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C561	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C562	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C563	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C564	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C565	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C566	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C567	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C568	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C569	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C570	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C571	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C572	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C573	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C574	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C575	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C577	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C578	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C580	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C581	1-164-232-11	CERAMIC CHIP 0.01MF	50V

<DIODE>

REF.NO.	PART NO.	DESCRIPTION	REMARK
D501	8-719-900-95	DIODE V09G	
D502	8-719-900-95	DIODE V09G	
D503	8-719-800-76	DIODE 1SS226	

DB

REF.NO.	PART NO.	DESCRIPTION	REMARK
D504	8-719-800-76	DIODE 1SS226	
D505	8-719-800-76	DIODE 1SS226	
D506	8-719-800-76	DIODE 1SS226	
D507	8-719-800-76	DIODE 1SS226	
D508	8-719-800-76	DIODE 1SS226	

<IC>

REF.NO.	PART NO.	DESCRIPTION	REMARK
IC501	8-759-926-48	SN74HC244NS	
IC502	8-759-926-48	SN74HC244NS	
IC503	8-759-926-48	SN74HC244NS	
IC504	8-759-926-48	SN74HC244NS	
IC505	8-759-304-70	IC HD74HC138FP	
IC506	8-759-304-70	IC HD74HC138FP	
IC507	8-759-304-70	IC HD74HC138FP	
IC508	8-759-304-70	IC HD74HC138FP	
IC509	8-759-304-70	IC HD74HC138FP	
IC510	8-759-304-70	IC HD74HC138FP	
IC511	8-759-995-64	IC MB86023	
IC512	8-759-995-64	IC MB86023	
IC513	8-759-995-64	IC MB86023	
IC514	8-759-995-64	IC MB86023	
IC515	8-759-995-64	IC MB86023	
IC516	8-759-995-64	IC MB86023	
IC517	8-759-995-64	IC MB86023	
IC518	8-759-995-64	IC MB86023	
IC519	8-759-995-64	IC MB86023	
IC520	8-759-995-64	IC MB86023	
IC521	8-759-995-64	IC MB86023	
IC522	8-759-995-64	IC MB86023	
IC523	8-759-995-64	IC MB86023	
IC524	8-759-995-64	IC MB86023	
IC525	8-759-995-64	IC MB86023	
IC526	8-759-995-64	IC MB86023	
IC527	8-759-995-64	IC MB86023	
IC528	8-759-995-64	IC MB86023	
IC529	8-759-995-64	IC MB86023	
IC530	8-759-995-64	IC MB86023	
IC531	8-759-995-64	IC MB86023	
IC532	8-759-995-64	IC MB86023	
IC533	8-759-995-64	IC MB86023	
IC534	8-759-995-64	IC MB86023	
IC535	8-759-995-64	IC MB86023	
IC536	8-759-995-64	IC MB86023	
IC537	8-759-995-64	IC MB86023	
IC538	8-759-995-64	IC MB86023	
IC539	8-759-995-64	IC MB86023	
IC540	8-759-995-64	IC MB86023	
IC541	8-759-995-64	IC MB86023	
IC542	8-759-995-64	IC MB86023	
IC543	8-759-995-64	IC MB86023	
IC544	8-759-995-64	IC MB86023	
IC545	8-759-995-64	IC MB86023	
IC546	8-759-995-64	IC MB86023	
IC547	8-759-100-96	IC UPC4558G2	
IC548	8-759-100-96	IC UPC4558G2	
IC549	8-759-114-06	IC UPC814G2-1	
IC550	8-759-114-06	IC UPC814G2-1	
IC551	8-759-114-06	IC UPC814G2-1	
IC552	8-759-147-47	IC UPC-1093T	

<COIL>

REF.NO.	PART NO.	DESCRIPTION	REMARK
L501	1-459-155-00	COIL (WITH CORE) 45UH	
L502	1-459-155-00	COIL (WITH CORE) 45UH	

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
R501	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R502	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R503	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R504	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R505	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R506	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R507	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R508	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R509	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R510	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R511	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R512	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R513	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R514	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R515	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R516	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R517	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R518	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R519	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R520	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R521	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R522	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R523	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R524	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R525	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R526	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R527	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R528	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R529	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R530	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R531	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R532	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R533	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R534	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R535	1-216-627-11	METAL CHIP 100 0.50% 1/10W	
R536	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R537	1-216-653-11	METAL CHIP 1.2K 0.50% 1/10W	
R538	1-216-653-11	METAL CHIP 1.2K 0.50% 1/10W	
R539	1-216-653-11	METAL CHIP 1.2K 0.50% 1/10W	
R540	1-216-627-11	METAL CHIP 100 0.50% 1/10W	
R541	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R542	1-216-671-11	METAL CHIP 6.8K 0.50% 1/10W	
R543	1-216-671-11	METAL CHIP 6.8K 0.50% 1/10W	
R544	1-216-671-11	METAL CHIP 6.8K 0.50% 1/10W	
R545	1-216-627-11	METAL CHIP 100 0.50% 1/10W	
R546	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R547	1-216-663-11	METAL CHIP 3.3K 0.50% 1/10W	
R548	1-216-663-11	METAL CHIP 3.3K 0.50% 1/10W	
R549	1-216-663-11	METAL CHIP 3.3K 0.50% 1/10W	
R550	1-216-627-11	METAL CHIP 100 0.50% 1/10W	
R551	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R552	1-216-667-11	METAL CHIP 4.7K 0.50% 1/10W	
R553	1-216-667-11	METAL CHIP 4.7K 0.50% 1/10W	
R554	1-216-667-11	METAL CHIP 4.7K 0.50% 1/10W	
R555	1-216-627-11	METAL CHIP 100 0.50% 1/10W	
R556	1-216-671-11	METAL CHIP 6.8K 0.50% 1/10W	
R557	1-216-671-11	METAL CHIP 6.8K 0.50% 1/10W	
R558	1-216-627-11	METAL CHIP 100 0.50% 1/10W	
R559	1-216-667-11	METAL CHIP 4.7K 0.50% 1/10W	
R560	1-216-663-11	METAL CHIP 3.3K 0.50% 1/10W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R561	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W	
R562	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W	
R563	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R564	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R565	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W	
R566	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W	
R567	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R568	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R569	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R570	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R571	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R572	1-216-697-11	METAL CHIP	82K	0.50%	1/10W	
R573	1-216-697-11	METAL CHIP	82K	0.50%	1/10W	
R574	1-216-697-11	METAL CHIP	82K	0.50%	1/10W	
R575	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R576	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R577	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R578	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R579	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R580	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R581	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R582	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R583	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R584	1-216-697-11	METAL CHIP	82K	0.50%	1/10W	
R585	1-216-697-11	METAL CHIP	82K	0.50%	1/10W	
R586	1-216-697-11	METAL CHIP	82K	0.50%	1/10W	
R587	1-216-697-11	METAL CHIP	82K	0.50%	1/10W	
R588	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R589	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R590	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R591	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R592	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R593	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R594	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R595	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R596	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R597	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R598	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R599	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R601	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R602	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R603	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R604	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R605	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R606	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R607	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R608	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R609	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R610	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R611	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R612	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R613	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R614	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R615	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R616	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R617	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R618	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R619	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R620	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R621	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R622	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R623	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R624	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R625	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R626	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R627	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R628	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R629	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R630	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R631	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R632	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R633	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R634	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R635	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R636	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R637	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R638	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R639	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R640	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R641	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R642	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R643	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R644	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R645	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R646	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R647	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R648	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R649	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R650	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R651	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R652	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R653	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R654	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R655	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R656	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R657	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R658	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R659	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R660	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R661	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R662	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R663	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R664	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R665	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R666	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R667	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R668	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R669	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R670	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R671	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R672	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R673	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R674	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R675	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R676	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R677	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R678	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R679	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R680	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R681	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R682	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R683	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R684	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R685	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R686	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R687	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R688	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R689	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R690	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R691	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R692	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R693	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R694	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R695	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R696	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R697	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R698	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R699	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R700	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R701	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R702	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R703	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R704	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R705	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R706	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R707	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R708	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R709	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R710	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R711	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R712	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R713	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R714	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R715	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R716	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R717	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R718	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R719	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R720	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R721	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R722	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R723	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R724	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R725	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R726	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R727	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R728	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R729	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R801	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R802	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R803	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R804	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W	
R805	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R806	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R807	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R808	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R809	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R810	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R811	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R812	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R813	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	

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REF.NO.	PART NO.	DESCRIPTION	REMARK
	*A-1345-907-A	E BOARD, COMPLETE	
	*1-508-742-00	PIN, CONNECTOR 3P	
	*1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P	
	*1-564-509-11	PLUG, CONNECTOR 6P	
	*1-564-514-11	PLUG, CONNECTOR 11P	
	*1-564-516-11	PLUG, CONNECTOR 13P	
	*1-568-536-11	PLUG (MINIATURE DY) 6P	
	*4-341-751-01	EYELET	
	*4-341-752-01	EYELET	

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
C1	1-126-899-11	ELECT	3900MF	20%	16V	
C2	1-126-899-11	ELECT	3900MF	20%	16V	
C3	1-126-899-11	ELECT	3900MF	20%	16V	
C4	1-102-824-00	CERAMIC	470PF	5%	50V	
C5	1-136-153-00	FILM	0.01MF	5%	50V	
C6	1-102-824-00	CERAMIC	470PF	5%	50V	
C7	1-102-824-00	CERAMIC	470PF	5%	50V	
C8	1-136-153-00	FILM	0.01MF	5%	50V	
C9	1-102-824-00	CERAMIC	470PF	5%	50V	
C10	1-136-153-00	FILM	0.01MF	5%	50V	
C11	1-102-824-00	CERAMIC	470PF	5%	50V	
C12	1-102-824-00	CERAMIC	470PF	5%	50V	
C13	1-130-908-00	FILM	0.0039MF	3%	1.6KV	
C14	1-130-908-00	FILM	0.0039MF	3%	1.6KV	
C15	1-124-585-11	ELECT	3300MF	20%	10V	
C16	1-124-585-11	ELECT	3300MF	20%	10V	
C17	1-123-935-00	ELECT	33MF	20%	160V	
C19	1-124-585-11	ELECT	3300MF	20%	10V	
C21	1-136-945-11	FILM	8.2MF	5%	200V	
C22	1-136-945-11	FILM	8.2MF	5%	200V	
C23	1-136-945-11	FILM	8.2MF	5%	200V	
C24	1-136-945-11	FILM	8.2MF	5%	200V	
C30	1-136-613-11	FILM	0.0068MF	3%	2KV	
C31	1-106-391-12	MYLAR	0.1MF	10%	200V	
C32	1-123-875-11	ELECT	10MF	20%	50V	
C35	1-102-244-00	CERAMIC	220PF	10%	500V	
C36	1-162-115-00	CERAMIC	330PF	15%	1.5KV	
C37	1-162-115-00	CERAMIC	330PF	15%	1.5KV	
C38	1-162-115-00	CERAMIC	330PF	15%	1.5KV	
C101	1-102-973-00	CERAMIC	100PF	5%	50V	
C102	1-136-159-00	FILM	0.033MF	5%	50V	
C104	1-136-165-00	FILM	0.1MF	5%	50V	
C105	1-136-165-00	FILM	0.1MF	5%	50V	
C106	1-126-101-11	ELECT	100MF	20%	16V	
C109	1-124-499-11	ELECT	1MF	20%	50V	
C110	1-126-101-11	ELECT	100MF	20%	16V	
C111	1-126-101-11	ELECT	100MF	20%	16V	
C112	1-126-101-11	ELECT	100MF	20%	16V	
C113	1-126-233-11	ELECT	22MF	20%	50V	
C114	1-124-499-11	ELECT	1MF	20%	50V	
C115	1-136-153-00	FILM	0.01MF	5%	50V	
C116	1-130-475-00	MYLAR	0.0022MF	5%	50V	
C117	1-102-973-00	CERAMIC	100PF	5%	50V	
C118	1-136-165-00	FILM	0.1MF	5%	50V	
C119	1-126-101-11	ELECT	100MF	20%	16V	
C120	1-123-939-00	ELECT	10MF	20%	200V	
C121	1-136-159-00	FILM	0.033MF	5%	50V	
C122	1-124-494-00	ELECT	33MF		160V	
C123	1-124-494-00	ELECT	33MF		160V	
C124	1-125-499-11	ELECT(BLOCK)	220MF	20%	200V	
C125	1-136-153-00	FILM	0.01MF	5%	50V	
C126	1-130-471-00	MYLAR	0.001MF	5%	50V	
C128	1-123-939-00	ELECT	10MF	20%	200V	
C129	1-123-939-00	ELECT	10MF	20%	200V	
C130	1-124-120-11	ELECT	220MF	20%	16V	
C131	1-124-120-11	ELECT	220MF	20%	16V	
C132	1-124-494-00	ELECT	33MF		160V	
C133	1-124-499-11	ELECT	1MF	20%	50V	

REF.NO.	PART NO.	DESCRIPTION			REMARK
C134	1-124-478-11	ELECT	100MF	20%	25V
C135	1-124-478-11	ELECT	100MF	20%	25V
C136	1-126-233-11	ELECT	22MF	20%	50V
C137	1-102-973-00	CERAMIC	100PF	5%	50V
C138	1-123-875-11	ELECT	10MF	20%	50V
C139	1-124-360-00	ELECT	1000MF	20%	16V
C140	1-136-169-00	FILM	0.22MF	5%	50V
C141	1-130-471-00	MYLAR	0.001MF	5%	50V
C142	1-125-499-11	ELECT(BLOCK)	220MF	20%	200V
C143	1-102-824-00	CERAMIC	470PF	5%	50V
C144	1-136-165-00	FILM	0.1MF	5%	50V
C145	1-136-153-00	FILM	0.01MF	5%	50V
C146	1-136-173-00	FILM	0.47MF	5%	50V
C147	1-136-173-00	FILM	0.47MF	5%	50V
C148	1-126-101-11	ELECT	100MF	20%	16V
C149	1-123-875-11	ELECT	10MF	20%	50V
C150	1-130-471-00	MYLAR	0.001MF	5%	50V
C151	1-124-499-11	ELECT	1MF	20%	50V
C152	1-136-165-00	FILM	0.1MF	5%	50V
C153	1-124-963-11	ELECT	33MF	20%	16V
C154	1-136-165-00	FILM	0.1MF	5%	50V
C155	1-136-153-00	FILM	0.01MF	5%	50V
C156	1-136-165-00	FILM	0.1MF	5%	50V
C157	1-136-157-00	FILM	0.022MF	5%	50V
C158	1-124-046-00	ELECT	10MF		160V
C159	1-136-111-00	FILM	1MF	5%	200V
C160	1-136-111-00	FILM	1MF	5%	200V
C161	1-124-499-11	ELECT	1MF	20%	50V
C162	1-136-111-00	FILM	1MF	5%	200V
C163	1-123-875-11	ELECT	10MF	20%	50V
C164	1-123-875-11	ELECT	10MF	20%	50V
C165	1-123-875-11	ELECT	10MF	20%	50V
C166	1-123-875-11	ELECT	10MF	20%	50V
C167	1-102-824-00	CERAMIC	470PF	5%	50V
C168	1-136-153-00	FILM	0.01MF	5%	50V
C169	1-124-768-11	ELECT	4.7MF	20%	50V
C170	1-124-963-11	ELECT	33MF	20%	16V
C171	1-136-165-00	FILM	0.1MF	5%	50V
C172	1-123-875-11	ELECT	10MF	20%	50V
C173	1-124-963-11	ELECT	33MF	20%	16V
C174	1-124-963-11	ELECT	33MF	20%	16V
C175	1-130-706-00	FILM	0.008MF	3%	1.6KV
C176	1-106-391-12	MYLAR	0.1MF	10%	200V

<DIODE>

REF.NO.	PART NO.	DESCRIPTION	REMARK
D1	8-719-970-89	DIODE DD50R	
D7	8-719-908-20	DIODE ERC88-009	
D8	8-719-908-20	DIODE ERC88-009	
D9	8-719-971-20	DIODE ERC38-06	
D10	8-719-971-20	DIODE ERC38-06	
D12	8-719-971-20	DIODE ERC38-06	
D13	8-719-305-15	DIODE GH-3F	
D14	8-719-900-95	DIODE V09G	
D15	8-719-933-02	DIODE ERD33-02	
D103	8-719-911-19	DIODE 1SS119	
D104	8-719-911-19	DIODE 1SS119	
D105	8-719-938-28	DIODE ERA22-06	
D106	8-719-938-28	DIODE ERA22-06	
D107	8-719-911-19	DIODE 1SS119	
D109	8-719-938-28	DIODE ERA22-06	
D110	8-719-911-19	DIODE 1SS119	
D111	8-719-911-19	DIODE 1SS119	
D112	8-719-900-26	DIODE ERD29-08J	
D113	8-719-911-19	DIODE 1SS119	
D114	8-719-110-53	DIODE RD20ES-B2	
D115	8-719-110-53	DIODE RD20ES-B2	
D116	8-719-920-67	DIODE ERC91-02	
D117	8-719-911-19	DIODE 1SS119	
D118	8-719-938-28	DIODE ERA22-06	
D119	8-719-911-19	DIODE 1SS119	
D120	8-719-911-19	DIODE 1SS119	
D121	8-719-911-19	DIODE 1SS119	
D122	8-719-911-19	DIODE 1SS119	
D123	8-719-911-19	DIODE 1SS119	
D124	8-719-938-28	DIODE ERA22-06	
D126	8-719-110-88	DIODE RD39ES-B2	
D127	8-719-110-41	DIODE RD15ES-B2	
D128	8-719-110-41	DIODE RD15ES-B2	
D129	8-719-110-41	DIODE RD15ES-B2	
D130	8-719-110-41	DIODE RD15ES-B2	
D131	8-719-911-19	DIODE 1SS119	
D132	8-719-911-19	DIODE 1SS119	
D133	8-719-911-19	DIODE 1SS119	
D134	8-719-300-80	DIODE RU-1C	
D135	8-719-300-80	DIODE RU-1C	
D136	8-719-300-80	DIODE RU-1C	
D137	8-719-300-80	DIODE RU-1C	
D138	8-719-911-19	DIODE 1SS119	
D139	8-719-911-19	DIODE 1SS119	
D140	8-719-911-19	DIODE 1SS119	
D141	8-719-911-19	DIODE 1SS119	
D142	8-719-911-19	DIODE 1SS119	
D143	8-719-911-19	DIODE 1SS119	
D144	8-719-901-19	DIODE V11N	
D145	8-719-911-19	DIODE 1SS119	
D146	8-719-938-28	DIODE ERA22-06	
D147	8-719-110-08	DIODE RD8.2ES-B2	
D148	8-719-110-41	DIODE RD15ES-B2	

<COIL>

REF.NO.	PART NO.	DESCRIPTION	REMARK
FB1	1-410-396-41	FERRITE BEAD INDUCTOR	
FB2	1-410-396-41	FERRITE BEAD INDUCTOR	
FB3	1-410-396-41	FERRITE BEAD INDUCTOR	
FB4	1-410-396-41	FERRITE BEAD INDUCTOR	
FB5	1-410-396-41	FERRITE BEAD INDUCTOR	
L100	1-459-155-00	COIL (WITH CORE) 45UH	
L102	1-459-155-00	COIL (WITH CORE) 45UH	
L103	1-459-155-00	COIL (WITH CORE) 45UH	
L104	1-459-155-00	COIL (WITH CORE) 45UH	
L106	1-459-483-00	COIL (WITH CORE)	
L107	1-410-093-11	INDUCTOR 33MMH	
L108	1-410-093-11	INDUCTOR 33MMH	
L109	1-459-104-00	COIL, DUST CORE	
L110	1-459-104-00	COIL, DUST CORE	
L111	1-410-093-11	INDUCTOR 33MMH	
L112	1-460-022-11	COIL, CHOKE 1.3MMH	
L113	1-410-680-31	INDUCTOR 330UH	
L114	1-410-686-11	INDUCTOR 1MMH	
L115	1-407-500-00	INDUCTOR 4.7MMH	
LV1	1-460-019-11	COIL, HORIZONTAL ADJUSTMENT	
LV2	1-460-019-11	COIL, HORIZONTAL ADJUSTMENT	
LV3	1-460-019-11	COIL, HORIZONTAL ADJUSTMENT	

E

REF.NO.	PART NO.	DESCRIPTION		REMARK
		<IC>		
IC1	8-759-945-58	IC	RC4558P	
IC2	8-759-945-58	IC	RC4558P	
IC3	8-759-945-58	IC	RC4558P	
IC101	8-759-345-38	IC	HD14538BP	
IC102	8-759-109-82	IC	UPC814C	
IC103	8-759-109-82	IC	UPC814C	
IC104	8-759-945-58	IC	RC4558P	
IC105	8-759-945-58	IC	RC4558P	
IC106	8-759-945-58	IC	RC4558P	
IC107	8-759-014-95	IC	MC1495L	
IC108	8-759-945-58	IC	RC4558P	
IC109	8-759-982-13	IC	RC7812FA	
IC110	8-759-179-12	IC	UPC7912H	
IC111	8-759-100-75	IC	UPC1394C	
IC112	8-759-945-58	IC	RC4558P	
IC113	8-759-103-93	IC	UPC393C	
IC114	8-759-103-93	IC	UPC393C	
		<TRANSISTOR>		
Q1	8-729-142-69	TRANSISTOR	2SK817	
Q2	8-729-142-68	TRANSISTOR	2SJ143	
Q3	8-729-142-69	TRANSISTOR	2SK817	
Q4	8-729-142-68	TRANSISTOR	2SJ143	
Q5	8-729-142-69	TRANSISTOR	2SK817	
Q6	8-729-142-68	TRANSISTOR	2SJ143	
Q7	8-729-820-71	TRANSISTOR	2SC3998	
Q21	8-729-801-75	TRANSISTOR	2SD1403	
Q22	8-729-119-80	TRANSISTOR	2SC2688-LK	
Q101	8-729-105-74	TRANSISTOR	2SK523-M1	
Q102	8-729-119-76	TRANSISTOR	2SA1175-HFE	
Q103	8-729-119-78	TRANSISTOR	2SC2785-HFE	
Q104	8-729-119-76	TRANSISTOR	2SA1175-HFE	
Q106	8-729-119-78	TRANSISTOR	2SC2785-HFE	
Q107	8-729-140-96	TRANSISTOR	2SD774-34	
Q108	8-729-140-97	TRANSISTOR	2SB734-34	
Q109	8-729-105-74	TRANSISTOR	2SK523-M1	
Q110	8-729-143-42	TRANSISTOR	2SK929	
Q111	8-729-143-42	TRANSISTOR	2SK929	
Q112	8-729-142-68	TRANSISTOR	2SJ143	
Q113	8-729-119-78	TRANSISTOR	2SC2785-HFE	
Q115	8-729-900-80	TRANSISTOR	DTC114ES	
Q116	8-729-119-78	TRANSISTOR	2SC2785-HFE	
Q117	8-729-119-76	TRANSISTOR	2SA1175-HFE	
Q118	8-729-105-74	TRANSISTOR	2SK523-M1	
Q120	8-729-802-71	TRANSISTOR	2SA1407	
Q121	8-729-119-78	TRANSISTOR	2SC2785-HFE	
Q127	8-729-119-76	TRANSISTOR	2SA1175-HFE	
Q128	8-729-900-80	TRANSISTOR	DTC114ES	
Q129	8-729-119-78	TRANSISTOR	2SC2785-HFE	
Q130	8-729-119-78	TRANSISTOR	2SC2785-HFE	
Q131	8-729-119-76	TRANSISTOR	2SA1175-HFE	
Q132	8-729-119-76	TRANSISTOR	2SA1175-HFE	
Q133	8-729-119-78	TRANSISTOR	2SC2785-HFE	
Q134	8-729-119-78	TRANSISTOR	2SC2785-HFE	
Q135	8-729-119-78	TRANSISTOR	2SC2785-HFE	
Q136	8-729-119-76	TRANSISTOR	2SA1175-HFE	
Q137	8-729-119-80	TRANSISTOR	2SC2688-LK	
Q138	8-729-119-78	TRANSISTOR	2SC2785-HFE	
Q139	8-729-119-76	TRANSISTOR	2SA1175-HFE	
Q140	8-729-119-78	TRANSISTOR	2SC2785-HFE	
Q141	8-729-119-78	TRANSISTOR	2SC2785-HFE	
Q142	8-729-143-42	TRANSISTOR	2SK929	
Q143	8-729-119-80	TRANSISTOR	2SC2688-LK	

REF.NO.	PART NO.	DESCRIPTION					REMARK
Q144	8-729-905-86	TRANSISTOR	2SC4054N				
Q145	8-729-402-03	TRANSISTOR	2SK755				
Q146	8-729-119-80	TRANSISTOR	2SC2688-LK				
Q147	8-729-905-86	TRANSISTOR	2SC4054N				
Q148	8-729-802-71	TRANSISTOR	2SA1407				
Q149	8-729-119-78	TRANSISTOR	2SC2785-HFE				
Q150	8-729-402-03	TRANSISTOR	2SK755				
		<RESISTOR>					
R1	1-216-393-00	METAL OXIDE		2.2	5%	3W	F
R2	1-216-393-00	METAL OXIDE		2.2	5%	3W	F
R3	1-216-393-00	METAL OXIDE		2.2	5%	3W	F
R4	1-249-417-11	CARBON		1K	5%	1/4W	
R5	1-215-445-00	METAL		10K	1%	1/6W	
R7	1-215-445-00	METAL		10K	1%	1/6W	
R8	1-215-445-00	METAL		10K	1%	1/6W	
R9	1-215-445-00	METAL		10K	1%	1/6W	
R10	1-249-417-11	CARBON		1K	5%	1/4W	
R11	1-214-824-11	METAL		22	1%	1/2W	
R12	1-214-824-11	METAL		22	1%	1/2W	
R13	1-214-824-11	METAL		22	1%	1/2W	
R14	1-249-417-11	CARBON		1K	5%	1/4W	
R15	1-215-445-00	METAL		10K	1%	1/6W	
R17	1-215-445-00	METAL		10K	1%	1/6W	
R18	1-215-445-00	METAL		10K	1%	1/6W	
R19	1-215-445-00	METAL		10K	1%	1/6W	
R20	1-249-417-11	CARBON		1K	5%	1/4W	
R21	1-214-832-00	METAL		47	1%	1/2W	
R22	1-214-832-00	METAL		47	1%	1/2W	
R23	1-214-832-00	METAL		47	1%	1/2W	
R24	1-249-417-11	CARBON		1K	5%	1/4W	
R25	1-215-445-00	METAL		10K	1%	1/6W	
R27	1-215-445-00	METAL		10K	1%	1/6W	
R28	1-215-445-00	METAL		10K	1%	1/6W	
R29	1-215-445-00	METAL		10K	1%	1/6W	
R30	1-249-417-11	CARBON		1K	5%	1/4W	
R31	1-214-824-11	METAL		22	1%	1/2W	
R32	1-214-824-11	METAL		22	1%	1/2W	
R33	1-214-824-11	METAL		22	1%	1/2W	
R34	1-214-824-11	METAL		22	1%	1/2W	
R35	1-214-824-11	METAL		22	1%	1/2W	
R36	1-214-824-11	METAL		22	1%	1/2W	
R37	1-214-832-00	METAL		47	1%	1/2W	
R38	1-214-832-00	METAL		47	1%	1/2W	
R39	1-214-832-00	METAL		47	1%	1/2W	
R40	1-214-824-11	METAL		22	1%	1/2W	
R41	1-214-824-11	METAL		22	1%	1/2W	
R42	1-214-824-11	METAL		22	1%	1/2W	
R51	1-249-474-11	CARBON		1	5%	1/2W	F
R52	1-249-474-11	CARBON		1	5%	1/2W	F
R53	1-249-474-11	CARBON		1	5%	1/2W	F
R54	1-215-857-11	METAL OXIDE		10	5%	1W	F
R55	1-215-924-00	METAL OXIDE		15K	5%	3W	F
R56	1-247-716-11	CARBON		1.8K	5%	1/4W	F
R57	1-249-405-11	CARBON		100	5%	1/4W	
R58	1-249-405-11	CARBON		100	5%	1/4W	
R59	1-249-405-11	CARBON		100	5%	1/4W	
R60	1-249-405-11	CARBON		100	5%	1/4W	
R61	1-249-405-11	CARBON		100	5%	1/4W	
R62	1-249-405-11	CARBON		100	5%	1/4W	
R63	1-247-700-11	CARBON		100	5%	1/4W	F
R64	1-247-700-11	CARBON		100	5%	1/4W	F

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REF.NO.	PART NO.	DESCRIPTION				REMARK
R65	1-247-700-11	CARBON	100	5%	1/4W	F
R66	1-215-905-11	METAL OXIDE	10	5%	3W	F
R67	1-216-397-11	METAL OXIDE	4.7	5%	3W	F
R68	1-216-397-11	METAL OXIDE	4.7	5%	3W	F
R69	1-216-397-11	METAL OXIDE	4.7	5%	3W	F
R101	1-215-457-00	METAL	33K	1%	1/6W	
R102	1-249-429-11	CARBON	10K	5%	1/4W	
R103	1-249-429-11	CARBON	10K	5%	1/4W	
R105	1-249-425-11	CARBON	4.7K	5%	1/4W	
R106	1-215-445-00	METAL	10K	1%	1/6W	
R107	1-249-429-11	CARBON	10K	5%	1/4W	
R109	1-249-429-11	CARBON	10K	5%	1/4W	
R110	1-249-417-11	CARBON	1K	5%	1/4W	
R111	1-249-429-11	CARBON	10K	5%	1/4W	
R112	1-249-425-11	CARBON	4.7K	5%	1/4W	
R113	1-249-405-11	CARBON	100	5%	1/4W	
R114	1-249-417-11	CARBON	1K	5%	1/4W	
R115	1-215-445-00	METAL	10K	1%	1/6W	
R116	1-215-445-00	METAL	10K	1%	1/6W	
R117	1-215-433-00	METAL	3.3K	1%	1/6W	
R118	1-249-423-11	CARBON	3.3K	5%	1/4W	
R119	1-215-457-00	METAL	33K	1%	1/6W	
R120	1-215-457-00	METAL	33K	1%	1/6W	
R121	1-215-445-00	METAL	10K	1%	1/6W	
R122	1-249-425-11	CARBON	4.7K	5%	1/4W	
R123	1-215-445-00	METAL	10K	1%	1/6W	
R124	1-215-445-00	METAL	10K	1%	1/6W	
R125	1-215-457-00	METAL	33K	1%	1/6W	
R126	1-215-457-00	METAL	33K	1%	1/6W	
R127	1-215-447-00	METAL	12K	1%	1/6W	
R128	1-215-445-00	METAL	10K	1%	1/6W	
R129	1-215-447-00	METAL	12K	1%	1/6W	
R130	1-249-425-11	CARBON	4.7K	5%	1/4W	
R131	1-215-445-00	METAL	10K	1%	1/6W	
R132	1-215-449-00	METAL	15K	1%	1/6W	
R133	1-249-425-11	CARBON	4.7K	5%	1/4W	
R134	1-215-453-00	METAL	22K	1%	1/6W	
R135	1-249-429-11	CARBON	10K	5%	1/4W	
R136	1-249-423-11	CARBON	3.3K	5%	1/4W	
R137	1-249-423-11	CARBON	3.3K	5%	1/4W	
R138	1-249-423-11	CARBON	3.3K	5%	1/4W	
R139	1-249-425-11	CARBON	4.7K	5%	1/4W	
R140	1-249-417-11	CARBON	1K	5%	1/4W	
R141	1-249-421-11	CARBON	2.2K	5%	1/4W	
R142	1-249-421-11	CARBON	2.2K	5%	1/4W	
R143	1-249-417-11	CARBON	1K	5%	1/4W	
R144	1-249-421-11	CARBON	2.2K	5%	1/4W	
R145	1-249-423-11	CARBON	3.3K	5%	1/4W	
R146	1-249-437-11	CARBON	47K	5%	1/4W	
R147	1-249-421-11	CARBON	2.2K	5%	1/4W	
R148	1-249-437-11	CARBON	47K	5%	1/4W	
R149	1-249-417-11	CARBON	1K	5%	1/4W	
R150	1-215-461-00	METAL	47K	1%	1/6W	
R151	1-249-425-11	CARBON	4.7K	5%	1/4W	
R152	1-215-445-00	METAL	10K	1%	1/6W	
R153	1-215-445-00	METAL	10K	1%	1/6W	
R154	1-247-895-00	CARBON	470K	5%	1/4W	
R155	1-249-420-11	CARBON	1.8K	5%	1/4W	
R156	1-249-437-11	CARBON	47K	5%	1/4W	
R157	1-249-413-11	CARBON	470	5%	1/4W	
R158	1-249-405-11	CARBON	100	5%	1/4W	
R159	1-249-405-11	CARBON	100	5%	1/4W	
R160	1-249-417-11	CARBON	1K	5%	1/4W	
R161	1-215-467-00	METAL	82K	1%	1/6W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R162	1-215-866-11	METAL OXIDE	330	5%	1W	F
R163	1-215-461-00	METAL	47K	1%	1/6W	
R164	1-249-421-11	CARBON	2.2K	5%	1/4W	
R165	1-215-445-00	METAL	10K	1%	1/6W	
R166	1-249-429-11	CARBON	10K	5%	1/4W	
R167	1-249-437-11	CARBON	47K	5%	1/4W	
R168	1-249-429-11	CARBON	10K	5%	1/4W	
R169	1-247-725-11	CARBON	10K	5%	1/4W	F
R170	1-249-425-11	CARBON	4.7K	5%	1/4W	
R171	1-249-417-11	CARBON	1K	5%	1/4W	
R172	1-249-417-11	CARBON	1K	5%	1/4W	
R173	1-216-389-11	METAL OXIDE	1	5%	3W	F
R174	1-216-388-11	METAL OXIDE	0.82	5%	3W	F
R176	1-247-713-11	CARBON	1K	5%	1/4W	F
R177	1-215-445-00	METAL	10K	1%	1/6W	
R178	1-249-417-11	CARBON	1K	5%	1/4W	
R179	1-249-429-11	CARBON	10K	5%	1/4W	
R180	1-215-433-00	METAL	3.3K	1%	1/6W	
R181	1-249-441-11	CARBON	100K	5%	1/4W	
R182	1-249-421-11	CARBON	2.2K	5%	1/4W	
R183	1-249-405-11	CARBON	100	5%	1/4W	
R184	1-249-425-11	CARBON	4.7K	5%	1/4W	
R186	1-249-437-11	CARBON	47K	5%	1/4W	
R187	1-215-461-00	METAL	47K	1%	1/6W	
R191	1-249-423-11	CARBON	3.3K	5%	1/4W	
R192	1-249-433-11	CARBON	22K	5%	1/4W	
R193	1-247-903-00	CARBON	1M	5%	1/4W	
R194	1-249-423-11	CARBON	3.3K	5%	1/4W	
R195	1-249-423-11	CARBON	3.3K	5%	1/4W	
R196	1-247-883-00	CARBON	150K	5%	1/4W	
R197	1-249-405-11	CARBON	100	5%	1/4W	
R198	1-215-447-00	METAL	12K	1%	1/6W	
R199	1-249-423-11	CARBON	3.3K	5%	1/4W	
R201	1-249-417-11	CARBON	1K	5%	1/4W	
R202	1-249-417-11	CARBON	1K	5%	1/4W	
R203	1-249-453-11	CARBON	3.3	5%	1/4W	F
R204	1-249-429-11	CARBON	10K	5%	1/4W	
R205	1-249-427-11	CARBON	6.8K	5%	1/4W	
R206	1-249-429-11	CARBON	10K	5%	1/4W	
R207	1-249-441-11	CARBON	100K	5%	1/4W	
R208	1-216-341-11	METAL OXIDE	0.22	5%	1W	F
R209	1-249-417-11	CARBON	1K	5%	1/4W	
R210	1-215-451-00	METAL	18K	1%	1/6W	
R212	1-249-431-11	CARBON	15K	5%	1/4W	
R213	1-249-429-11	CARBON	10K	5%	1/4W	
R214	1-215-883-11	METAL OXIDE	33	5%	2W	F
R215	1-249-417-11	CARBON	1K	5%	1/4W	
R216	1-249-423-11	CARBON	3.3K	5%	1/4W	
R217	1-249-399-11	CARBON	33	5%	1/4W	
R218	1-249-417-11	CARBON	1K	5%	1/4W	F
R219	1-215-445-00	METAL	10K	1%	1/6W	
R220	1-215-445-00	METAL	10K	1%	1/6W	
R221	1-249-476-11	CARBON	1.5	5%	1/2W	F
R222	1-249-441-11	CARBON	100K	5%	1/4W	
R223	1-249-429-11	CARBON	10K	5%	1/4W	
R224	1-249-429-11	CARBON	10K	5%	1/4W	
R225	1-249-421-11	CARBON	2.2K	5%	1/4W	
R226	1-215-445-00	METAL	10K	1%	1/6W	
R227	1-249-429-11	CARBON	10K	5%	1/4W	
R228	1-249-429-11	CARBON	10K	5%	1/4W	
R229	1-249-429-11	CARBON	10K	5%	1/4W	
R230	1-249-443-11	CARBON	0.47	5%	1/4W	F
R231	1-249-443-11	CARBON	0.47	5%	1/4W	F

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION				REMARK
R232	1-249-437-11	CARBON	47K	5%	1/4W	
R233	1-249-417-11	CARBON	1K	5%	1/4W	
R234	1-249-417-11	CARBON	1K	5%	1/4W	
R235	1-249-437-11	CARBON	47K	5%	1/4W	
R236	1-249-437-11	CARBON	47K	5%	1/4W	
R237	1-249-441-11	CARBON	100K	5%	1/4W	
R238	1-249-399-11	CARBON	33	5%	1/4W	
R239	1-249-423-11	CARBON	3.3K	5%	1/4W	
R240	1-249-441-11	CARBON	100K	5%	1/4W	
R241	1-249-437-11	CARBON	47K	5%	1/4W	
R242	1-215-461-00	METAL	47K	1%	1/6W	
R243	1-215-469-00	METAL	100K	1%	1/6W	
R244	1-249-423-11	CARBON	3.3K	5%	1/4W	
R245	1-216-441-00	METAL OXIDE	27K	5%	1W	F
R246	1-215-435-00	METAL	3.9K	1%	1/6W	
R247	1-249-421-11	CARBON	2.2K	5%	1/4W	
R248	1-249-425-11	CARBON	4.7K	5%	1/4W	
R249	1-215-421-00	METAL	1K	1%	1/6W	
R250	1-215-445-00	METAL	10K	1%	1/6W	
R251	1-247-887-00	CARBON	220K	5%	1/4W	
R252	1-249-429-11	CARBON	10K	5%	1/4W	
R254	1-249-405-11	CARBON	100	5%	1/4W	
R255	1-249-417-11	CARBON	1K	5%	1/4W	
R256	1-249-441-11	CARBON	100K	5%	1/4W	
R257	1-249-437-11	CARBON	47K	5%	1/4W	
R258	1-215-435-00	METAL	3.9K	1%	1/6W	
R259	1-215-439-00	METAL	5.6K	1%	1/6W	
R260	1-215-445-00	METAL	10K	1%	1/6W	
R261	1-249-429-11	CARBON	10K	5%	1/4W	
R262	1-249-405-11	CARBON	100	5%	1/4W	
R263	1-215-878-00	METAL OXIDE	33K	5%	1W	F
R264	1-249-429-11	CARBON	10K	5%	1/4W	
R265	1-249-405-11	CARBON	100	5%	1/4W	
R266	1-249-441-11	CARBON	100K	5%	1/4W	
R267	1-215-379-00	METAL	18	1%	1/6W	
R268	1-215-379-00	METAL	18	1%	1/6W	
R269	1-215-421-00	METAL	1K	1%	1/6W	
R270	1-215-421-00	METAL	1K	1%	1/6W	
R271	1-215-924-00	METAL OXIDE	15K	5%	3W	F
R272	1-249-453-11	CARBON	3.3	5%	1/4W	F
R273	1-249-429-11	CARBON	10K	5%	1/4W	
R274	1-249-429-11	CARBON	10K	5%	1/4W	
R275	1-219-429-11	CARBON	10K	5%	1/4W	
R276	1-249-429-11	CARBON	10K	5%	1/4W	
R281	1-249-451-11	CARBON	2.2	5%	1/4W	F
R282	1-249-451-11	CARBON	2.2	5%	1/4W	F
R283	1-249-425-11	CARBON	4.7K	5%	1/4W	
R284	1-215-467-00	METAL	82K	1%	1/6W	
R285	1-215-445-00	METAL	10K	1%	1/6W	
R286	1-215-911-11	METAL OXIDE	100	5%	3W	F
R287	1-202-846-00	SOLID	470K	10%	1/2W	
R288	1-202-846-00	SOLID	470K	10%	1/2W	
R289	1-202-846-00	SOLID	470K	10%	1/2W	
R290	1-202-846-00	SOLID	470K	10%	1/2W	
R291	1-249-421-11	CARBON	2.2K	5%	1/4W	
R292	1-249-421-11	CARBON	2.2K	5%	1/4W	
R293	1-249-437-11	CARBON	47K	5%	1/4W	
R294	1-249-437-11	CARBON	47K	5%	1/4W	
R295	1-249-453-11	CARBON	3.3	5%	1/4W	F
R296	1-249-429-11	CARBON	10K	5%	1/4W	

<VARIABLE RESISTOR>

REF.NO.	PART NO.	DESCRIPTION
RV104	1-228-997-00	RES, ADJ, CARBON 100K

<TRANSFORMER>

REF.NO.	PART NO.	DESCRIPTION	REMARK
T2	⚠ 1-439-479-11	TRANSFORMER, LINE OUTPUT	
T3	1-437-078-00	TRANSFORMER, HORIZONTAL DRIVE	
T102	1-439-480-11	TRANSFORMER, HORIZONTAL OUTPUT	
T103	1-437-144-11	TRANSFORMER, FERRITE (HDT)	
T104	1-437-144-11	TRANSFORMER, FERRITE (HDT)	
T105	1-424-290-11	TRANSFORMER, DRIVE	

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*A-1345-908-A DC BOARD, COMPLETE
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PART NO.	DESCRIPTION
*1-508-742-00	PIN, CONNECTOR 3P
*1-564-507-11	PLUG, CONNECTOR 4P
*1-564-508-11	PLUG, CONNECTOR 5P
*1-564-509-11	PLUG, CONNECTOR 6P
*1-564-514-11	PLUG, CONNECTOR 11P
*1-564-515-11	PLUG, CONNECTOR 12P
*4-395-525-01	HOLDER (D), TR
*4-395-527-01	HOLDER (B), TR
4-874-042-00	SHEET, INSULATING

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION			
C1	1-124-122-11	ELECT	100MF	20%	50V
C2	1-126-101-11	ELECT	100MF	20%	16V
C3	1-124-122-11	ELECT	100MF	20%	50V
C4	1-126-101-11	ELECT	100MF	20%	16V
C5	1-124-122-11	ELECT	100MF	20%	50V
C6	1-102-963-00	CERAMIC	33PF	5%	50V
C7	1-102-963-00	CERAMIC	33PF	5%	50V
C8	1-136-157-00	FILM	0.022MF	5%	50V
C9	1-124-499-11	ELECT	1MF	20%	50V
C10	1-124-122-11	ELECT	100MF	20%	50V
C11	1-102-963-00	CERAMIC	33PF	5%	50V
C12	1-102-963-00	CERAMIC	33PF	5%	50V
C13	1-136-157-00	FILM	0.022MF	5%	50V
C14	1-124-499-11	ELECT	1MF	20%	50V
C15	1-124-122-11	ELECT	100MF	20%	50V
C16	1-102-963-00	CERAMIC	33PF	5%	50V
C17	1-102-963-00	CERAMIC	33PF	5%	50V
C18	1-136-157-00	FILM	0.022MF	5%	50V
C19	1-124-499-11	ELECT	1MF	20%	50V
C20	1-136-173-00	FILM	0.47MF	5%	50V
C21	1-124-556-11	ELECT	2200MF	20%	16V
C22	1-124-556-11	ELECT	2200MF	20%	16V
C24	1-136-165-00	FILM	0.1MF	5%	50V
C25	1-136-165-00	FILM	0.1MF	5%	50V
C26	1-136-165-00	FILM	0.1MF	5%	50V
C27	1-136-165-00	FILM	0.1MF	5%	50V
C28	1-136-165-00	FILM	0.1MF	5%	50V
C29	1-136-165-00	FILM	0.1MF	5%	50V
C30	1-136-165-00	FILM	0.1MF	5%	50V
C31	1-136-165-00	FILM	0.1MF	5%	50V
C32	1-136-165-00	FILM	0.1MF	5%	50V
C33	1-124-477-11	ELECT	47MF	20%	16V
C34	1-124-499-11	ELECT	1MF	20%	50V
C101	1-102-824-00	CERAMIC	470PF	5%	50V
C102	1-124-499-11	ELECT	1MF	20%	50V
C103	1-101-004-00	CERAMIC	0.01MF		50V
C104	1-124-122-11	ELECT	100MF	20%	50V
C105	1-124-637-11	ELECT	1000MF	20%	50V

REF.NO.	PART NO.	DESCRIPTION			REMARK
C106	1-124-499-11	ELECT	1MF	20%	50V
C107	1-101-004-00	CERAMIC	0.01MF		50V
C108	1-124-122-11	ELECT	100MF	20%	50V
C109	1-124-637-11	ELECT	1000MF	20%	50V
C202	1-102-973-00	CERAMIC	100PF	5%	50V
C203	1-102-973-00	CERAMIC	100PF	5%	50V
C204	1-136-153-00	FILM	0.01MF	5%	50V
C205	1-124-477-11	ELECT	47MF	20%	16V
C206	1-124-122-11	ELECT	100MF	20%	50V
C207	1-101-004-00	CERAMIC	0.01MF		50V
C208	1-124-122-11	ELECT	100MF	20%	50V
C209	1-101-004-00	CERAMIC	0.01MF		50V
C211	1-102-973-00	CERAMIC	100PF	5%	50V
C212	1-102-973-00	CERAMIC	100PF	5%	50V
C213	1-136-153-00	FILM	0.01MF	5%	50V
C214	1-124-477-11	ELECT	47MF	20%	16V
C215	1-124-122-11	ELECT	100MF	20%	50V
C216	1-101-004-00	CERAMIC	0.01MF		50V
C217	1-124-122-11	ELECT	100MF	20%	50V
C218	1-101-004-00	CERAMIC	0.01MF		50V
C220	1-102-973-00	CERAMIC	100PF	5%	50V
C221	1-102-973-00	CERAMIC	100PF	5%	50V
C222	1-136-153-00	FILM	0.01MF	5%	50V
C223	1-124-477-11	ELECT	47MF	20%	16V
C224	1-124-122-11	ELECT	100MF	20%	50V
C225	1-101-004-00	CERAMIC	0.01MF		50V
C226	1-124-122-11	ELECT	100MF	20%	50V
C227	1-101-004-00	CERAMIC	0.01MF		50V
C228	1-123-875-11	ELECT	10MF	20%	50V
C229	1-101-004-00	CERAMIC	0.01MF		50V
C230	1-123-875-11	ELECT	10MF	20%	50V
C231	1-101-004-00	CERAMIC	0.01MF		50V
C232	1-123-875-11	ELECT	10MF	20%	50V
C233	1-101-004-00	CERAMIC	0.01MF		50V
C234	1-123-875-11	ELECT	10MF	20%	50V
C235	1-101-004-00	CERAMIC	0.01MF		50V
C236	1-123-875-11	ELECT	10MF	20%	50V
C237	1-101-004-00	CERAMIC	0.01MF		50V
C238	1-123-875-11	ELECT	10MF	20%	50V
C239	1-101-004-00	CERAMIC	0.01MF		50V
C240	1-101-880-00	CERAMIC	47PF	5%	50V
C241	1-101-880-00	CERAMIC	47PF	5%	50V
C242	1-101-880-00	CERAMIC	47PF	5%	50V
C302	1-102-973-00	CERAMIC	100PF	5%	50V
C303	1-102-973-00	CERAMIC	100PF	5%	50V
C304	1-136-153-00	FILM	0.01MF	5%	50V
C305	1-124-477-11	ELECT	47MF	20%	16V
C306	1-124-122-11	ELECT	100MF	20%	50V
C307	1-101-004-00	CERAMIC	0.01MF		50V
C308	1-124-122-11	ELECT	100MF	20%	50V
C309	1-101-004-00	CERAMIC	0.01MF		50V
C311	1-102-973-00	CERAMIC	100PF	5%	50V
C312	1-102-973-00	CERAMIC	100PF	5%	50V
C313	1-136-153-00	FILM	0.01MF	5%	50V
C314	1-124-477-11	ELECT	47MF	20%	16V
C315	1-124-122-11	ELECT	100MF	20%	50V
C316	1-101-004-00	CERAMIC	0.01MF		50V
C317	1-124-122-11	ELECT	100MF	20%	50V
C318	1-101-004-00	CERAMIC	0.01MF		50V
C320	1-102-973-00	CERAMIC	100PF	5%	50V
C321	1-102-973-00	CERAMIC	100PF	5%	50V
C322	1-136-153-00	FILM	0.01MF	5%	50V
C323	1-124-477-11	ELECT	47MF	20%	16V
C324	1-124-477-11	ELECT	47MF	20%	16V
C325	1-101-004-00	CERAMIC	0.01MF		50V
C326	1-124-477-11	ELECT	47MF	20%	16V
C327	1-101-004-00	CERAMIC	0.01MF		50V
C328	1-123-875-11	ELECT	10MF	20%	50V
C329	1-101-004-00	CERAMIC	0.01MF		50V
C330	1-123-875-11	ELECT	10MF	20%	50V
C331	1-101-004-00	CERAMIC	0.01MF		50V
C332	1-123-875-11	ELECT	10MF	20%	50V
C333	1-101-004-00	CERAMIC	0.01MF		50V
C334	1-123-875-11	ELECT	10MF	20%	50V
C335	1-101-004-00	CERAMIC	0.01MF		50V
C336	1-123-875-11	ELECT	10MF	20%	50V
C337	1-101-004-00	CERAMIC	0.01MF		50V
C338	1-123-875-11	ELECT	10MF	20%	50V
C339	1-101-004-00	CERAMIC	0.01MF		50V
C340	1-101-880-00	CERAMIC	47PF	5%	50V
C341	1-101-880-00	CERAMIC	47PF	5%	50V
C342	1-101-880-00	CERAMIC	47PF	5%	50V

<DIODE>

REF.NO.	PART NO.	DESCRIPTION
D1	8-719-900-95	DIODE V09G
D2	8-719-900-95	DIODE V09G
D3	8-719-900-95	DIODE V09G
D4	8-719-911-19	DIODE 1SS119
D5	8-719-900-95	DIODE V09G
D6	8-719-911-19	DIODE 1SS119
D7	8-719-900-95	DIODE V09G
D8	8-719-911-19	DIODE 1SS119
D9	8-719-911-19	DIODE 1SS119
D10	8-719-911-19	DIODE 1SS119
D11	8-719-911-19	DIODE 1SS119
D12	8-719-911-19	DIODE 1SS119
D13	8-719-911-19	DIODE 1SS119
D15	8-719-911-19	DIODE 1SS119
D101	8-719-911-19	DIODE 1SS119
D102	8-719-908-20	DIODE ERC88-009
D103	8-719-908-20	DIODE ERC88-009
D104	8-719-911-19	DIODE 1SS119
D105	8-719-908-20	DIODE ERC88-009
D106	8-719-908-20	DIODE ERC88-009
D201	8-719-110-41	DIODE RD15ES-B2
D202	8-719-109-66	DIODE RD3.3ES-B2
D203	8-719-911-19	DIODE 1SS119
D204	8-719-911-19	DIODE 1SS119
D205	8-719-110-41	DIODE RD15ES-B2
D206	8-719-109-66	DIODE RD3.3ES-B2
D207	8-719-911-19	DIODE 1SS119
D208	8-719-911-19	DIODE 1SS119
D209	8-719-110-41	DIODE RD15ES-B2
D210	8-719-109-66	DIODE RD3.3ES-B2
D211	8-719-911-19	DIODE 1SS119
D212	8-719-911-19	DIODE 1SS119
D301	8-719-110-41	DIODE RD15ES-B2
D302	8-719-109-66	DIODE RD3.3ES-B2
D303	8-719-911-19	DIODE 1SS119
D304	8-719-911-19	DIODE 1SS119
D305	8-719-110-41	DIODE RD15ES-B2
D306	8-719-109-66	DIODE RD3.3ES-B2
D307	8-719-911-19	DIODE 1SS119
D308	8-719-911-19	DIODE 1SS119
D309	8-719-110-41	DIODE RD15ES-B2
D310	8-719-109-66	DIODE RD3.3ES-B2

Dc

REF.NO.	PART NO.	DESCRIPTION	REMARK
D311	8-719-911-19	DIODE 1SS119	
D312	8-719-911-19	DIODE 1SS119	

<COIL>

REF.NO.	PART NO.	DESCRIPTION	REMARK
FB1	1-410-396-41	FERRITE BEAD INDUCTOR	
FB2	1-410-396-41	FERRITE BEAD INDUCTOR	
FB3	1-410-396-41	FERRITE BEAD INDUCTOR	
FB4	1-410-396-41	FERRITE BEAD INDUCTOR	
L101	1-459-155-00	COIL (WITH CORE) 45UH	
L102	1-459-155-00	COIL (WITH CORE) 45UH	
L103	1-459-155-00	COIL (WITH CORE) 45UH	
L104	1-459-155-00	COIL (WITH CORE) 45UH	

<IC>

REF.NO.	PART NO.	DESCRIPTION	REMARK
IC1	8-759-982-13	IC RC7812FA	
IC2	8-759-179-12	IC UPC7912H	
IC3	8-759-945-58	IC RC4558P	
IC4	8-759-113-13	IC UPC1498H	
IC5	8-759-945-58	IC RC4558P	
IC6	8-759-113-13	IC UPC1498H	
IC7	8-759-945-58	IC RC4558P	
IC8	8-759-113-13	IC UPC1498H	
IC9	8-759-945-58	IC RC4558P	
IC101	8-759-109-82	IC UPC814C	
IC102	8-759-109-82	IC UPC814C	
IC103	8-759-109-82	IC UPC814C	
IC201	8-759-973-02	IC LM6364N	
IC202	8-759-973-02	IC LM6364N	
IC203	8-759-973-02	IC LM6364N	
IC301	8-759-973-02	IC LM6364N	
IC302	8-759-973-02	IC LM6364N	
IC303	8-759-973-02	IC LM6364N	

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q1	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q2	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q3	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q4	8-729-900-89	TRANSISTOR DTC144ES	
Q5	8-729-900-89	TRANSISTOR DTC144ES	
Q6	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q7	8-729-900-89	TRANSISTOR DTC144ES	
Q8	8-729-900-89	TRANSISTOR DTC144ES	
Q9	8-729-207-89	TRANSISTOR 2SA1358-Y	
Q10	8-729-207-82	TRANSISTOR 2SC3421-Y	
Q11	8-729-900-89	TRANSISTOR DTC144ES	
Q13	8-729-900-89	TRANSISTOR DTC144ES	
Q101	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q102	8-729-105-72	TRANSISTOR 2SK523-L1	
Q103	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q104	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q105	8-729-142-68	TRANSISTOR 2SJ143	
Q106	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q107	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q108	8-729-142-69	TRANSISTOR 2SK817	
Q201	8-729-207-89	TRANSISTOR 2SA1358-Y	
Q202	8-729-207-82	TRANSISTOR 2SC3421-Y	
Q203	8-729-142-74	TRANSISTOR 2SD1977	
Q204	8-729-142-70	TRANSISTOR 2SB1315	
Q205	8-729-207-89	TRANSISTOR 2SA1358-Y	
Q206	8-729-207-82	TRANSISTOR 2SC3421-Y	
Q207	8-729-142-74	TRANSISTOR 2SD1977	
Q208	8-729-142-70	TRANSISTOR 2SB1315	
Q209	8-729-207-89	TRANSISTOR 2SA1358-Y	
Q210	8-729-207-82	TRANSISTOR 2SC3421-Y	
Q211	8-729-142-74	TRANSISTOR 2SD1977	
Q212	8-729-142-70	TRANSISTOR 2SB1315	
Q301	8-729-207-89	TRANSISTOR 2SA1358-Y	
Q302	8-729-207-82	TRANSISTOR 2SC3421-Y	
Q303	8-729-142-74	TRANSISTOR 2SD1977	
Q304	8-729-142-70	TRANSISTOR 2SB1315	
Q305	8-729-207-89	TRANSISTOR 2SA1358-Y	
Q306	8-729-207-82	TRANSISTOR 2SC3421-Y	
Q307	8-729-142-74	TRANSISTOR 2SD1977	
Q308	8-729-142-70	TRANSISTOR 2SB1315	
Q309	8-729-207-89	TRANSISTOR 2SA1358-Y	
Q310	8-729-207-82	TRANSISTOR 2SC3421-Y	
Q311	8-729-142-74	TRANSISTOR 2SD1977	
Q312	8-729-142-70	TRANSISTOR 2SB1315	

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
R1	1-215-463-00	METAL	56K	1%	1/6W	
R2	1-215-445-00	METAL	10K	1%	1/6W	
R3	1-215-445-00	METAL	10K	1%	1/6W	
R4	1-214-800-11	METAL	2.2	1%	1/2W	
R5	1-214-800-11	METAL	2.2	1%	1/2W	
R6	1-215-429-00	METAL	2.2K	1%	1/6W	
R7	1-215-421-00	METAL	1K	1%	1/6W	
R8	1-215-898-11	METAL OXIDE	10K	5%	2W	F
R9	1-249-433-11	CARBON	22K	5%	1/4W	
R10	1-249-417-11	CARBON	1K	5%	1/4W	
R11	1-249-441-11	CARBON	100K	5%	1/4W	
R12	1-249-429-11	CARBON	10K	5%	1/4W	
R13	1-249-429-11	CARBON	10K	5%	1/4W	
R14	1-249-429-11	CARBON	10K	5%	1/4W	
R15	1-215-463-00	METAL	56K	1%	1/6W	
R16	1-215-445-00	METAL	10K	1%	1/6W	
R17	1-215-445-00	METAL	10K	1%	1/6W	
R18	1-214-800-11	METAL	2.2	1%	1/2W	
R19	1-214-800-11	METAL	2.2	1%	1/2W	
R20	1-215-429-00	METAL	2.2K	1%	1/6W	
R21	1-215-421-00	METAL	1K	1%	1/6W	
R22	1-215-898-11	METAL OXIDE	10K	5%	2W	F
R23	1-249-433-11	CARBON	22K	5%	1/4W	
R24	1-249-417-11	CARBON	1K	5%	1/4W	
R25	1-249-441-11	CARBON	100K	5%	1/4W	
R26	1-249-429-11	CARBON	10K	5%	1/4W	
R27	1-249-429-11	CARBON	10K	5%	1/4W	
R28	1-249-429-11	CARBON	10K	5%	1/4W	
R29	1-215-463-00	METAL	56K	1%	1/6W	
R30	1-215-445-00	METAL	10K	1%	1/6W	
R31	1-215-445-00	METAL	10K	1%	1/6W	
R32	1-214-800-11	METAL	2.2	1%	1/2W	
R33	1-214-800-11	METAL	2.2	1%	1/2W	
R34	1-215-429-00	METAL	2.2K	1%	1/6W	
R35	1-215-421-00	METAL	1K	1%	1/6W	
R36	1-215-898-11	METAL OXIDE	10K	5%	2W	F
R37	1-249-433-11	CARBON	22K	5%	1/4W	
R38	1-249-417-11	CARBON	1K	5%	1/4W	
R39	1-249-441-11	CARBON	100K	5%	1/4W	
R40	1-249-429-11	CARBON	10K	5%	1/4W	
R41	1-249-429-11	CARBON	10K	5%	1/4W	
R42	1-249-429-11	CARBON	10K	5%	1/4W	
R43	1-249-429-11	CARBON	10K	5%	1/4W	
R44	1-249-429-11	CARBON	10K	5%	1/4W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R45	1-249-417-11	CARBON	1K	5%	1/4W	
R46	1-249-433-11	CARBON	22K	5%	1/4W	
R47	1-249-417-11	CARBON	1K	5%	1/4W	
R48	1-249-429-11	CARBON	10K	5%	1/4W	
R49	1-249-429-11	CARBON	10K	5%	1/4W	
R50	1-249-437-11	CARBON	47K	5%	1/4W	
R51	1-249-417-11	CARBON	1K	5%	1/4W	
R52	1-249-417-11	CARBON	1K	5%	1/4W	
R53	1-249-437-11	CARBON	47K	5%	1/4W	
R54	1-249-417-11	CARBON	1K	5%	1/4W	
R55	1-215-883-11	METAL OXIDE	33	5%	2W	F
R56	1-249-433-11	CARBON	22K	5%	1/4W	
R57	1-249-429-11	CARBON	10K	5%	1/4W	
R58	1-249-417-11	CARBON	1K	5%	1/4W	
R59	1-215-883-11	METAL OXIDE	33	5%	2W	F
R61	1-215-463-00	METAL	56K	1%	1/6W	
R62	1-215-463-00	METAL	56K	1%	1/6W	
R63	1-215-463-00	METAL	56K	1%	1/6W	
R64	1-216-363-00	METAL OXIDE	0.33	5%	2W	F
R65	1-216-363-00	METAL OXIDE	0.33	5%	2W	F
R66	1-249-425-11	CARBON	4.7K	5%	1/4W	
R67	1-249-429-11	CARBON	10K	5%	1/4W	
R68	1-249-433-11	CARBON	22K	5%	1/4W	
R69	1-249-429-11	CARBON	10K	5%	1/4W	
R73	1-249-441-11	CARBON	100K	5%	1/4W	
R74	1-249-425-11	CARBON	4.7K	5%	1/4W	
R75	1-216-363-00	METAL OXIDE	0.33	5%	2W	F
R76	1-216-363-00	METAL OXIDE	0.33	5%	2W	F
R77	1-249-417-11	CARBON	1K	5%	1/4W	
R101	1-249-417-11	CARBON	1K	5%	1/4W	
R102	1-249-417-11	CARBON	1K	5%	1/4W	
R103	1-249-419-11	CARBON	1.5K	5%	1/4W	
R104	1-249-429-11	CARBON	10K	5%	1/4W	
R105	1-249-425-11	CARBON	4.7K	5%	1/4W	
R106	1-249-417-11	CARBON	1K	5%	1/4W	
R107	1-249-393-11	CARBON	10	5%	1/4W	F
R108	1-249-393-11	CARBON	10	5%	1/4W	F
R109	1-249-405-11	CARBON	100	5%	1/4W	
R110	1-249-393-11	CARBON	10	5%	1/4W	
R111	1-249-417-11	CARBON	1K	5%	1/4W	
R112	1-249-393-11	CARBON	10	5%	1/4W	F
R113	1-249-393-11	CARBON	10	5%	1/4W	F
R114	1-249-405-11	CARBON	100	5%	1/4W	
R115	1-249-393-11	CARBON	10	5%	1/4W	
R201	1-215-421-00	METAL	1K	1%	1/6W	
R202	1-215-445-00	METAL	10K	1%	1/6W	
R203	1-215-421-00	METAL	1K	1%	1/6W	
R204	1-215-421-00	METAL	1K	1%	1/6W	
R205	1-215-435-00	METAL	3.9K	1%	1/6W	
R206	1-215-421-00	METAL	1K	1%	1/6W	
R207	1-215-421-00	METAL	1K	1%	1/6W	
R208	1-214-814-11	METAL	8.2	1%	1/2W	
R209	1-214-814-11	METAL	8.2	1%	1/2W	
R210	1-214-814-11	METAL	8.2	1%	1/2W	
R211	1-214-814-11	METAL	8.2	1%	1/2W	
R212	1-214-814-11	METAL	8.2	1%	1/2W	
R213	1-214-814-11	METAL	8.2	1%	1/2W	
R214	1-249-435-11	CARBON	33K	5%	1/4W	
R215	1-249-426-11	CARBON	5.6K	5%	1/4W	
R216	1-249-415-11	CARBON	680	5%	1/4W	F
R217	1-249-427-11	CARBON	6.8K	5%	1/4W	
R218	1-249-407-11	CARBON	150	5%	1/4W	
R219	1-249-403-11	CARBON	68	5%	1/4W	F
R221	1-216-369-00	METAL OXIDE	1	5%	2W	F
R222	1-216-369-00	METAL OXIDE	1	5%	2W	F
R223	1-215-888-00	METAL OXIDE	220	5%	2W	F
R224	1-215-421-00	METAL	1K	1%	1/6W	
R225	1-215-445-00	METAL	10K	1%	1/6W	
R226	1-215-421-00	METAL	1K	1%	1/6W	
R227	1-215-421-00	METAL	1K	1%	1/6W	
R228	1-215-435-00	METAL	3.9K	1%	1/6W	
R229	1-215-421-00	METAL	1K	1%	1/6W	
R230	1-215-421-00	METAL	1K	1%	1/6W	
R231	1-214-814-11	METAL	8.2	1%	1/2W	
R232	1-214-814-11	METAL	8.2	1%	1/2W	
R233	1-214-814-11	METAL	8.2	1%	1/2W	
R234	1-214-814-11	METAL	8.2	1%	1/2W	
R235	1-214-814-11	METAL	8.2	1%	1/2W	
R236	1-214-814-11	METAL	8.2	1%	1/2W	
R237	1-249-435-11	CARBON	33K	5%	1/4W	
R238	1-249-426-11	CARBON	5.6K	5%	1/4W	
R239	1-249-415-11	CARBON	680	5%	1/4W	F
R240	1-249-427-11	CARBON	6.8K	5%	1/4W	
R241	1-249-407-11	CARBON	150	5%	1/4W	
R242	1-249-403-11	CARBON	68	5%	1/4W	F
R244	1-216-369-00	METAL OXIDE	1	5%	2W	F
R245	1-216-369-00	METAL OXIDE	1	5%	2W	F
R246	1-215-888-00	METAL OXIDE	220	5%	2W	F
R247	1-215-421-00	METAL	1K	1%	1/6W	
R248	1-215-445-00	METAL	10K	1%	1/6W	
R249	1-215-421-00	METAL	1K	1%	1/6W	
R250	1-215-421-00	METAL	1K	1%	1/6W	
R251	1-215-435-00	METAL	3.9K	1%	1/6W	
R252	1-215-421-00	METAL	1K	1%	1/6W	
R253	1-215-421-00	METAL	1K	1%	1/6W	
R254	1-214-814-11	METAL	8.2	1%	1/2W	
R255	1-214-814-11	METAL	8.2	1%	1/2W	
R256	1-214-814-11	METAL	8.2	1%	1/2W	
R257	1-214-814-11	METAL	8.2	1%	1/2W	
R258	1-214-814-11	METAL	8.2	1%	1/2W	
R259	1-214-814-11	METAL	8.2	1%	1/2W	
R260	1-249-435-11	CARBON	33K	5%	1/4W	
R261	1-249-426-11	CARBON	5.6K	5%	1/4W	
R262	1-249-415-11	CARBON	680	5%	1/4W	F
R263	1-249-427-11	CARBON	6.8K	5%	1/4W	
R264	1-249-407-11	CARBON	150	5%	1/4W	
R265	1-249-403-11	CARBON	68	5%	1/4W	F
R267	1-216-369-00	METAL OXIDE	1	5%	2W	F
R268	1-216-369-00	METAL OXIDE	1	5%	2W	F
R269	1-215-888-00	METAL OXIDE	220	5%	2W	F
R270	1-249-405-11	CARBON	100	5%	1/4W	
R271	1-249-405-11	CARBON	100	5%	1/4W	
R272	1-249-405-11	CARBON	100	5%	1/4W	
R273	1-249-405-11	CARBON	100	5%	1/4W	
R274	1-249-405-11	CARBON	100	5%	1/4W	
R275	1-249-405-11	CARBON	100	5%	1/4W	
R301	1-215-421-00	METAL	1K	1%	1/6W	
R302	1-215-445-00	METAL	10K	1%	1/6W	
R303	1-215-421-00	METAL	1K	1%	1/6W	
R304	1-215-421-00	METAL	1K	1%	1/6W	
R305	1-215-435-00	METAL	3.9K	1%	1/6W	
R306	1-215-421-00	METAL	1K	1%	1/6W	
R307	1-215-421-00	METAL	1K	1%	1/6W	
R308	1-214-814-11	METAL	8.2	1%	1/2W	
R309	1-214-814-11	METAL	8.2	1%	1/2W	
R310	1-214-814-11	METAL	8.2	1%	1/2W	
R311	1-214-814-11	METAL	8.2	1%	1/2W	

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REF.NO.	PART NO.	DESCRIPTION				REMARK
R312	1-214-814-11	METAL	8.2	1%	1/2W	
R313	1-214-814-11	METAL	8.2	1%	1/2W	
R314	1-249-435-11	CARBON	33K	5%	1/4W	
R315	1-249-426-11	CARBON	5.6K	5%	1/4W	
R316	1-249-415-11	CARBON	680	5%	1/4W	F
R317	1-249-427-11	CARBON	6.8K	5%	1/4W	
R318	1-249-407-11	CARBON	150	5%	1/4W	
R319	1-249-403-11	CARBON	68	5%	1/4W	F
R321	1-216-369-00	METAL OXIDE	1	5%	2W	F
R322	1-216-369-00	METAL OXIDE	1	5%	2W	F
R323	1-215-888-00	METAL OXIDE	220	5%	2W	F
R324	1-215-421-00	METAL	1K	1%	1/6W	
R325	1-215-445-00	METAL	10K	1%	1/6W	
R326	1-215-421-00	METAL	1K	1%	1/6W	
R327	1-215-421-00	METAL	1K	1%	1/6W	
R328	1-215-435-00	METAL	3.9K	1%	1/6W	
R329	1-215-421-00	METAL	1K	1%	1/6W	
R330	1-215-421-00	METAL	1K	1%	1/6W	
R331	1-214-814-11	METAL	8.2	1%	1/2W	
R332	1-214-814-11	METAL	8.2	1%	1/2W	
R333	1-214-814-11	METAL	8.2	1%	1/2W	
R334	1-214-814-11	METAL	8.2	1%	1/2W	
R335	1-214-814-11	METAL	8.2	1%	1/2W	
R336	1-214-814-11	METAL	8.2	1%	1/2W	
R337	1-249-435-11	CARBON	33K	5%	1/4W	
R338	1-249-426-11	CARBON	5.6K	5%	1/4W	
R339	1-249-415-11	CARBON	680	5%	1/4W	F
R340	1-249-427-11	CARBON	6.8K	5%	1/4W	
R341	1-249-407-11	CARBON	150	5%	1/4W	
R342	1-249-403-11	CARBON	68	5%	1/4W	F
R344	1-216-369-00	METAL OXIDE	1	5%	2W	F
R345	1-216-369-00	METAL OXIDE	1	5%	2W	F
R346	1-215-888-00	METAL OXIDE	220	5%	2W	F
R347	1-215-421-00	METAL	1K	1%	1/6W	
R348	1-215-445-00	METAL	10K	1%	1/6W	
R349	1-215-421-00	METAL	1K	1%	1/6W	
R350	1-215-421-00	METAL	1K	1%	1/6W	
R351	1-215-435-00	METAL	3.9K	1%	1/6W	
R352	1-215-421-00	METAL	1K	1%	1/6W	
R353	1-215-421-00	METAL	1K	1%	1/6W	
R354	1-214-814-11	METAL	8.2	1%	1/2W	
R355	1-214-814-11	METAL	8.2	1%	1/2W	
R356	1-214-814-11	METAL	8.2	1%	1/2W	
R357	1-214-814-11	METAL	8.2	1%	1/2W	
R358	1-214-814-11	METAL	8.2	1%	1/2W	
R359	1-214-814-11	METAL	8.2	1%	1/2W	
R360	1-249-435-11	CARBON	33K	5%	1/4W	
R361	1-249-426-11	CARBON	5.6K	5%	1/4W	
R362	1-249-415-11	CARBON	680	5%	1/4W	F
R363	1-249-427-11	CARBON	6.8K	5%	1/4W	
R364	1-249-407-11	CARBON	150	5%	1/4W	
R365	1-249-403-11	CARBON	68	5%	1/4W	F
R367	1-216-369-00	METAL OXIDE	1	5%	2W	F
R368	1-216-369-00	METAL OXIDE	1	5%	2W	F
R369	1-215-888-00	METAL OXIDE	220	5%	2W	F
R370	1-249-405-11	CARBON	100	5%	1/4W	
R371	1-249-405-11	CARBON	100	5%	1/4W	
R372	1-249-405-11	CARBON	100	5%	1/4W	
R373	1-249-405-11	CARBON	100	5%	1/4W	
R374	1-249-405-11	CARBON	100	5%	1/4W	
R375	1-249-405-11	CARBON	100	5%	1/4W	

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REF.NO.	PART NO.	DESCRIPTION				REMARK
	*1-629-809-11	L BOARD				
		*******				
	*1-564-511-11	PLUG, CONNECTOR 8P				
	*1-564-512-11	PLUG, CONNECTOR 9P				
	*1-564-514-11	PLUG, CONNECTOR 11P				
	*1-564-517-11	PLUG, CONNECTOR 2P				

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION			
C1	1-126-233-11	ELECT	22MF	20%	50V
C2	1-124-477-11	ELECT	47MF	20%	16V
C3	1-101-004-00	CERAMIC	0.01MF		50V
C4	1-102-973-00	CERAMIC	100PF	5%	50V
C5	1-102-973-00	CERAMIC	100PF	5%	50V
C6	1-136-165-00	FILM	0.1MF	5%	50V
C7	1-102-973-00	CERAMIC	100PF	5%	50V
C8	1-102-973-00	CERAMIC	100PF	5%	50V
C9	1-136-165-00	FILM	0.1MF	5%	50V
C10	1-102-973-00	CERAMIC	100PF	5%	50V
C11	1-102-973-00	CERAMIC	100PF	5%	50V
C12	1-136-165-00	FILM	0.1MF	5%	50V
C13	1-101-004-00	CERAMIC	0.01MF		50V
C14	1-101-004-00	CERAMIC	0.01MF		50V
C15	1-101-004-00	CERAMIC	0.01MF		50V
C16	1-101-004-00	CERAMIC	0.01MF		50V

<DIODE>

REF.NO.	PART NO.	DESCRIPTION
D1	8-719-900-95	DIODE V09G
D2	8-719-911-19	DIODE 1SS119
D3	8-719-911-19	DIODE 1SS119
D4	8-719-911-19	DIODE 1SS119

<IC>

REF.NO.	PART NO.	DESCRIPTION
IC1	8-759-604-39	IC M5F78M12
IC2	8-759-234-04	IC TA7267BP
IC3	8-759-234-04	IC TA7267BP
IC4	8-759-234-04	IC TA7267BP
IC5	8-759-107-33	IC UPC1060C
IC6	8-759-007-10	IC MC74HC541N
IC7	8-759-044-95	IC MC14495P
IC8	8-759-044-95	IC MC14495P
IC9	8-719-901-68	DIODE GL-6R202

<COIL>

REF.NO.	PART NO.	DESCRIPTION	
L1	1-410-671-31	INDUCTOR	47UH
L2	1-410-671-31	INDUCTOR	47UH

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION
Q1	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q2	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q3	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q4	8-729-119-78	TRANSISTOR 2SC2785-HFE

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION			
R1	1-249-441-11	CARBON	100K	5%	1/4W
R2	1-249-441-11	CARBON	100K	5%	1/4W
R3	1-249-441-11	CARBON	100K	5%	1/4W
R4	1-249-405-11	CARBON	100	5%	1/4W
R5	1-249-405-11	CARBON	100	5%	1/4W

REF.NO.	PART NO.	DESCRIPTION				REMARK
R6	1-249-399-11	CARBON	33	5%	1/4W	
R7	1-249-441-11	CARBON	100K	5%	1/4W	
R8	1-249-441-11	CARBON	100K	5%	1/4W	
R9	1-249-441-11	CARBON	100K	5%	1/4W	
R10	1-249-405-11	CARBON	100	5%	1/4W	
R11	1-249-405-11	CARBON	100	5%	1/4W	
R12	1-249-399-11	CARBON	33	5%	1/4W	
R13	1-249-441-11	CARBON	100K	5%	1/4W	
R14	1-249-441-11	CARBON	100K	5%	1/4W	
R15	1-249-441-11	CARBON	100K	5%	1/4W	
R16	1-249-405-11	CARBON	100	5%	1/4W	
R17	1-249-405-11	CARBON	100	5%	1/4W	
R18	1-249-399-11	CARBON	33	5%	1/4W	
R19	1-249-415-11	CARBON	680	5%	1/4W	
R20	1-249-413-11	CARBON	470	5%	1/4W	
R21	1-249-441-11	CARBON	100K	5%	1/4W	
R22	1-215-429-00	METAL	2.2K	1%	1/6W	
R23	1-215-405-00	METAL	220	1%	1/6W	
R24	1-215-387-00	METAL	39	1%	1/6W	
R25	1-215-477-00	METAL	220K	1%	1/6W	
R26	1-215-477-00	METAL	220K	1%	1/6W	
R27	1-249-441-11	CARBON	100K	5%	1/4W	
R28	1-249-441-11	CARBON	100K	5%	1/4W	

<CLOCK>

REF.NO.	PART NO.	DESCRIPTION
TM1	1-548-119-21	CLOCK
	1-533-190-11	CLIP, FUSE; TM1
TM2	1-548-119-21	CLOCK
	1-533-190-11	CLIP, FUSE; TM2
TM3	1-548-119-21	CLOCK
	1-533-190-11	CLIP, FUSE; TM3

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A-1390-051-A QHD BOARD, COMPLETE
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PART NO.	DESCRIPTION
1-537-260-11	TERMINAL BOARD, INPUT OUTPUT
*1-568-981-11	CONNECTOR, MALE 64P
3-618-225-00	NUT, PLATE

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION			REMARK
C2	1-123-875-11	ELECT	10MF	20%	50V
C3	1-126-101-11	ELECT	100MF	20%	16V
C5	1-123-875-11	ELECT	10MF	20%	50V
C6	1-126-101-11	ELECT	100MF	20%	16V
C7	1-124-963-11	ELECT	33MF	20%	16V
C10	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C12	1-124-963-11	ELECT	33MF	20%	16V
C14	1-124-963-11	ELECT	33MF	20%	16V
C16	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C18	1-124-963-11	ELECT	33MF	20%	16V
C19	1-124-963-11	ELECT	33MF	20%	16V
C20	1-124-963-11	ELECT	33MF	20%	16V
C21	1-124-963-11	ELECT	33MF	20%	16V
C30	1-163-087-00	CERAMIC CHIP	4PF	0.25PF	50V
C32	1-124-963-11	ELECT	33MF	20%	16V
C33	1-124-282-00	ELECT	22MF	20%	16V
C34	1-124-282-00	ELECT	22MF	20%	16V
C35	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C36	1-124-963-11	ELECT	33MF	20%	16V
C37	1-124-963-11	ELECT	33MF	20%	16V
C38	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C39	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C40	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C41	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C42	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C43	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C44	1-124-963-11	ELECT	33MF	20%	16V
C45	1-124-963-11	ELECT	33MF	20%	16V
C101	1-124-282-00	ELECT	22MF	20%	16V
C102	1-124-282-00	ELECT	22MF	20%	16V
C103	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C105	1-124-282-00	ELECT	22MF	20%	16V
C106	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C107	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C108	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C109	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C110	1-124-963-11	ELECT	33MF	20%	16V
C111	1-124-791-11	ELECT	1MF	20%	50V
C112	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C114	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C115	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C116	1-124-963-11	ELECT	33MF	20%	16V
C117	1-124-963-11	ELECT	33MF	20%	16V
C119	1-124-963-11	ELECT	33MF	20%	16V
C120	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C121	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C122	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C123	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C124	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C125	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C126	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C127	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C128	1-124-963-11	ELECT	33MF	20%	16V
C129	1-124-963-11	ELECT	33MF	20%	16V
C170	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C173	1-124-963-11	ELECT	33MF	20%	16V
C174	1-124-963-11	ELECT	33MF	20%	16V
C175	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C176	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C201	1-124-282-00	ELECT	22MF	20%	16V
C202	1-124-282-00	ELECT	22MF	20%	16V
C203	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C205	1-124-282-00	ELECT	22MF	20%	16V
C206	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C207	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C208	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C209	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C210	1-124-963-11	ELECT	33MF	20%	16V
C211	1-124-791-11	ELECT	1MF	20%	50V
C212	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C214	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C215	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C216	1-124-963-11	ELECT	33MF	20%	16V
C217	1-124-963-11	ELECT	33MF	20%	16V
C218	1-124-963-11	ELECT	33MF	20%	16V
C219	1-124-963-11	ELECT	33MF	20%	16V
C220	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C221	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C222	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C223	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C224	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C225	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C226	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C227	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C228	1-124-963-11	ELECT	33MF	20%	16V

QHD

REF.NO.	PART NO.	DESCRIPTION			REMARK
C229	1-124-963-11	ELECT	33MF	20%	16V
C270	1-124-791-11	ELECT	1MF	20%	50V
C271	1-124-791-11	ELECT	1MF	20%	50V
C272	1-124-791-11	ELECT	1MF	20%	50V
C301	1-124-282-00	ELECT	22MF	20%	16V
C302	1-124-282-00	ELECT	22MF	20%	16V
C303	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C305	1-124-282-00	ELECT	22MF	20%	16V
C306	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C307	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C308	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C309	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C310	1-124-963-11	ELECT	33MF	20%	16V
C311	1-124-791-11	ELECT	1MF	20%	50V
C312	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C314	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C315	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C316	1-124-963-11	ELECT	33MF	20%	16V
C317	1-124-963-11	ELECT	33MF	20%	16V
C318	1-124-963-11	ELECT	33MF	20%	16V
C319	1-124-963-11	ELECT	33MF	20%	16V
C320	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C321	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C322	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C323	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C324	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C325	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C326	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C327	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C328	1-124-963-11	ELECT	33MF	20%	16V
C329	1-124-963-11	ELECT	33MF	20%	16V
C401	1-124-282-00	ELECT	22MF	20%	16V
C402	1-124-282-00	ELECT	22MF	20%	16V
C403	1-124-963-11	ELECT	33MF	20%	16V
C404	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C405	1-124-963-11	ELECT	33MF	20%	16V
C406	1-124-282-00	ELECT	22MF	20%	16V
C407	1-124-963-11	ELECT	33MF	20%	16V
C408	1-124-791-11	ELECT	1MF	20%	50V
C409	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C410	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C501	1-124-282-00	ELECT	22MF	20%	16V
C502	1-124-282-00	ELECT	22MF	20%	16V
C503	1-124-963-11	ELECT	33MF	20%	16V
C504	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C505	1-124-963-11	ELECT	33MF	20%	16V
C506	1-124-282-00	ELECT	22MF	20%	16V
C507	1-124-963-11	ELECT	33MF	20%	16V
C508	1-124-791-11	ELECT	1MF	20%	50V
C509	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C510	1-164-232-11	CERAMIC CHIP	0.01MF		50V

<DIODE>

REF.NO.	PART NO.	DESCRIPTION	REMARK
D1	8-719-900-95	DIODE V09G	
D2	8-719-900-95	DIODE V09G	
D3	8-719-900-95	DIODE V09G	
D4	8-719-105-82	DIODE RD5.1M-B2	
D6	8-719-105-82	DIODE RD5.1M-B2	
D7	8-719-105-32	DIODE RD2.7M-B2	
D30	8-719-800-76	DIODE 1SS226	
D31	8-719-105-82	DIODE RD5.1M-B2	
D32	8-719-800-76	DIODE 1SS226	
D101	8-719-800-76	DIODE 1SS226	
D102	8-719-800-76	DIODE 1SS226	
D170	8-719-800-76	DIODE 1SS226	
D201	8-719-800-76	DIODE 1SS226	
D202	8-719-800-76	DIODE 1SS226	
D301	8-719-800-76	DIODE 1SS226	
D302	8-719-800-76	DIODE 1SS226	
D401	8-719-800-76	DIODE 1SS226	
D402	8-719-800-76	DIODE 1SS226	
D403	8-719-800-76	DIODE 1SS226	
D404	8-719-800-76	DIODE 1SS226	
D405	8-719-800-76	DIODE 1SS226	
D501	8-719-800-76	DIODE 1SS226	
D502	8-719-800-76	DIODE 1SS226	
D503	8-719-800-76	DIODE 1SS226	
D504	8-719-800-76	DIODE 1SS226	
D505	8-719-800-76	DIODE 1SS226	
D506	8-719-105-32	DIODE RD2.7M-B2	

<DELAY LINE>

REF.NO.	PART NO.	DESCRIPTION	REMARK
DL1	1-415-466-11	DELAY LINE	
DL2	1-415-466-11	DELAY LINE	
DL3	1-415-464-11	DELAY LINE	
DL101	1-415-467-11	DELAY LINE	
DL201	1-415-467-11	DELAY LINE	
DL301	1-415-467-11	DELAY LINE	

<IC>

REF.NO.	PART NO.	DESCRIPTION	REMARK
IC1	8-759-701-77	IC NJM7808FA	
IC2	8-759-701-86	IC NJM7908FA	
IC3	8-759-982-21	IC RC78L05A	
IC101	8-759-800-81	IC LA7016	
IC102	8-759-800-81	IC LA7016	
IC103	8-759-800-81	IC LA7016	
IC201	8-759-800-81	IC LA7016	
IC202	8-759-800-81	IC LA7016	
IC203	8-759-800-81	IC LA7016	
IC301	8-759-800-81	IC LA7016	
IC302	8-759-800-81	IC LA7016	
IC303	8-759-800-81	IC LA7016	
IC401	8-759-240-53	IC TC4053BP	

<COIL>

REF.NO.	PART NO.	DESCRIPTION	REMARK
L1	1-459-155-00	COIL (WITH CORE) 45UH	
L2	1-459-155-00	COIL (WITH CORE) 45UH	

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q1	8-729-103-72	TRANSISTOR 2SD1005	
Q3	8-729-900-53	TRANSISTOR DTC114EK	
Q4	8-729-900-53	TRANSISTOR DTC114EK	
Q5	8-729-900-53	TRANSISTOR DTC114EK	
Q6	8-729-900-53	TRANSISTOR DTC114EK	
Q7	8-729-271-23	TRANSISTOR 2SC2712	
Q30	8-729-112-65	TRANSISTOR 2SA1462	
Q31	8-729-112-65	TRANSISTOR 2SA1462	
Q32	8-729-271-23	TRANSISTOR 2SC2712	
Q33	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q34	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q35	8-729-271-23	TRANSISTOR 2SC2712	
Q36	8-729-271-23	TRANSISTOR 2SC2712	

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q37	8-729-107-31	TRANSISTOR 2SC3545	
Q38	8-729-107-31	TRANSISTOR 2SC3545	
Q39	8-729-107-31	TRANSISTOR 2SC3545	
Q40	8-729-112-65	TRANSISTOR 2SA1462	
Q41	8-729-107-31	TRANSISTOR 2SC3545	
Q42	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q101	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q102	8-729-271-23	TRANSISTOR 2SC2712	
Q103	8-729-107-31	TRANSISTOR 2SC3545	
Q104	8-729-162-13	TRANSISTOR 2SC1621	
Q105	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q106	8-729-271-23	TRANSISTOR 2SC2712	
Q107	8-729-107-31	TRANSISTOR 2SC3545	
Q108	8-729-162-13	TRANSISTOR 2SC1621	
Q109	8-729-107-31	TRANSISTOR 2SC3545	
Q110	8-729-112-65	TRANSISTOR 2SA1462	
Q170	8-729-107-31	TRANSISTOR 2SC3545	
Q171	8-729-271-23	TRANSISTOR 2SC2712	
Q172	8-729-112-65	TRANSISTOR 2SA1462	
Q173	8-729-162-13	TRANSISTOR 2SC1621	
Q174	8-729-162-13	TRANSISTOR 2SC1621	
Q201	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q202	8-729-271-23	TRANSISTOR 2SC2712	
Q203	8-729-107-31	TRANSISTOR 2SC3545	
Q204	8-729-162-13	TRANSISTOR 2SC1621	
Q205	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q206	8-729-271-23	TRANSISTOR 2SC2712	
Q207	8-729-107-31	TRANSISTOR 2SC3545	
Q208	8-729-162-13	TRANSISTOR 2SC1621	
Q209	8-729-107-31	TRANSISTOR 2SC3545	
Q210	8-729-112-65	TRANSISTOR 2SA1462	
Q270	8-729-901-04	TRANSISTOR DTA114EK	
Q271	8-729-900-53	TRANSISTOR DTC114EK	
Q272	8-729-901-04	TRANSISTOR DTA114EK	
Q273	8-729-900-53	TRANSISTOR DTC114EK	
Q274	8-729-901-04	TRANSISTOR DTA114EK	
Q275	8-729-900-53	TRANSISTOR DTC114EK	
Q301	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q302	8-729-271-23	TRANSISTOR 2SC2712	
Q303	8-729-107-31	TRANSISTOR 2SC3545	
Q304	8-729-162-13	TRANSISTOR 2SC1621	
Q305	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q306	8-729-271-23	TRANSISTOR 2SC2712	
Q307	8-729-107-31	TRANSISTOR 2SC3545	
Q308	8-729-162-13	TRANSISTOR 2SC1621	
Q309	8-729-107-31	TRANSISTOR 2SC3545	
Q310	8-729-112-65	TRANSISTOR 2SA1462	
Q401	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q402	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q403	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q404	8-729-271-23	TRANSISTOR 2SC2712	
Q405	8-729-271-23	TRANSISTOR 2SC2712	
Q406	8-729-271-23	TRANSISTOR 2SC2712	
Q407	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q408	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q409	8-729-162-13	TRANSISTOR 2SC1621	
Q410	8-729-271-23	TRANSISTOR 2SC2712	
Q501	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q502	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q503	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q504	8-729-271-23	TRANSISTOR 2SC2712	
Q505	8-729-271-23	TRANSISTOR 2SC2712	
Q506	8-729-271-23	TRANSISTOR 2SC2712	
Q507	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q508	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q509	8-729-162-13	TRANSISTOR 2SC1621	
Q510	8-729-271-23	TRANSISTOR 2SC2712	

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
R1	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R5	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R6	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R7	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R8	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R9	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R10	1-216-693-11	METAL CHIP	56K	0.50%	1/10W	
R11	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R12	1-216-394-00	METAL OXIDE	2.7	5%	3W	F
R13	1-216-394-00	METAL OXIDE	2.7	5%	3W	F
R14	1-216-469-11	METAL OXIDE	12	5%	3W	F
R15	1-216-469-11	METAL OXIDE	12	5%	3W	F
R16	1-216-394-00	METAL OXIDE	2.7	5%	3W	F
R17	1-216-394-00	METAL OXIDE	2.7	5%	3W	F
R18	1-216-469-11	METAL OXIDE	12	5%	3W	F
R19	1-216-469-11	METAL OXIDE	12	5%	3W	F
R30	1-216-645-11	METAL CHIP	560	0.50%	1/10W	
R31	1-216-647-11	METAL CHIP	680	0.50%	1/10W	
R32	1-216-631-11	METAL CHIP	150	0.50%	1/10W	
R33	1-216-633-11	METAL CHIP	180	0.50%	1/10W	
R34	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R35	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R36	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R37	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R38	1-216-655-11	METAL CHIP	1.5K	0.50%	1/10W	
R39	1-216-645-11	METAL CHIP	560	0.50%	1/10W	
R40	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R41	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R42	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R44	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R45	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R46	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R47	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R49	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R50	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R51	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R52	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R53	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R54	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R55	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R56	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R57	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R58	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R59	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R60	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R62	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R63	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R64	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R65	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R66	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R67	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R68	1-216-633-11	METAL CHIP	180	0.50%	1/10W	
R69	1-216-621-11	METAL CHIP	56	0.50%	1/10W	
R70	1-216-655-11	METAL CHIP	1.5K	0.50%	1/10W	
R71	1-216-635-11	METAL CHIP	220	0.50%	1/10W	
R72	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R73	1-216-619-11	METAL CHIP	47	0.50%	1/10W	

HD

REF.NO.	PART NO.	DESCRIPTION				REMARK
R74	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R75	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R76	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W	
R77	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R78	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R79	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R80	1-216-635-11	METAL CHIP	220	0.50%	1/10W	
R81	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R82	1-216-649-11	METAL CHIP	820	0.50%	1/10W	
R83	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W	
R84	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W	
R85	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W	
R86	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R87	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R88	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R89	1-216-647-11	METAL CHIP	680	0.50%	1/10W	
R90	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R91	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R92	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R93	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R101	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R102	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R103	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R104	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R105	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R106	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R107	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R109	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R110	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R111	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R113	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R114	1-216-631-11	METAL CHIP	150	0.50%	1/10W	
R115	1-216-631-11	METAL CHIP	150	0.50%	1/10W	
R116	1-216-641-11	METAL CHIP	390	0.50%	1/10W	
R117	1-216-629-11	METAL CHIP	120	0.50%	1/10W	
R118	1-216-645-11	METAL CHIP	560	0.50%	1/10W	
R119	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R120	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R121	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R123	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R124	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R125	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R126	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R128	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R129	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R130	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R132	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R133	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R134	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R135	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R136	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R138	1-216-619-11	METAL CHIP	47	0.50%	1/10W	
R139	1-216-619-11	METAL CHIP	47	0.50%	1/10W	
R140	1-216-637-11	METAL CHIP	270	0.50%	1/10W	
R141	1-216-645-11	METAL CHIP	560	0.50%	1/10W	
R142	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R143	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R144	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R146	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R147	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R148	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R149	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R150	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R151	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R152	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R153	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R154	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R155	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R157	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R158	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R159	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R171	1-216-653-11	METAL CHIP	1.2K	0.50%	1/10W	
R172	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R173	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W	
R174	1-216-633-11	METAL CHIP	180	0.50%	1/10W	
R175	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R176	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R177	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R178	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R179	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R180	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R181	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R182	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R183	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R184	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R185	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R186	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R187	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R188	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R189	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R190	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R191	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R201	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R202	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R203	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R204	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R205	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R206	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R207	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R209	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R210	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R211	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R213	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R214	1-216-637-11	METAL CHIP	270	0.50%	1/10W	
R215	1-216-607-11	METAL CHIP	15	0.50%	1/10W	
R216	1-216-641-11	METAL CHIP	390	0.50%	1/10W	
R217	1-216-629-11	METAL CHIP	120	0.50%	1/10W	
R218	1-216-645-11	METAL CHIP	560	0.50%	1/10W	
R219	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R220	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R221	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R223	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R224	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R225	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R226	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R228	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R229	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R230	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R232	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R233	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R234	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R235	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R236	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R238	1-216-619-11	METAL CHIP	47	0.50%	1/10W	
R239	1-216-619-11	METAL CHIP	47	0.50%	1/10W	
R240	1-216-637-11	METAL CHIP	270	0.50%	1/10W	
R241	1-216-645-11	METAL CHIP	560	0.50%	1/10W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R242	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R243	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R244	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R246	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R247	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R248	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R249	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R250	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R251	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R252	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R253	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R254	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R255	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R257	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R258	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R259	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R270	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R271	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R272	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R273	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R274	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R275	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R276	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R277	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R278	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R301	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R302	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R303	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R304	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R305	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R306	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R307	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R309	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R310	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R311	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R313	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R314	1-216-633-11	METAL CHIP	180	0.50%	1/10W	
R315	1-216-631-11	METAL CHIP	150	0.50%	1/10W	
R316	1-216-641-11	METAL CHIP	390	0.50%	1/10W	
R317	1-216-629-11	METAL CHIP	120	0.50%	1/10W	
R318	1-216-645-11	METAL CHIP	560	0.50%	1/10W	
R319	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R320	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R321	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R323	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R324	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R325	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R326	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R328	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R329	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R330	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R332	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R333	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R334	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
R335	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R336	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R338	1-216-619-11	METAL CHIP	47	0.50%	1/10W	
R339	1-216-619-11	METAL CHIP	47	0.50%	1/10W	
R340	1-216-637-11	METAL CHIP	270	0.50%	1/10W	
R341	1-216-645-11	METAL CHIP	560	0.50%	1/10W	
R342	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R343	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R344	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R346	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R347	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R348	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R349	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R350	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R351	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R352	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R353	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R354	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R355	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R357	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R358	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R359	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R401	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R402	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R403	1-216-119-00	METAL GLAZE	820K	5%	1/10W	
R404	1-216-119-00	METAL GLAZE	820K	5%	1/10W	
R405	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R406	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R407	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R408	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R409	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R410	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R411	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R412	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R413	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R414	1-216-031-00	METAL GLAZE	180	5%	1/10W	
R415	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R416	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R417	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R418	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R419	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R420	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R421	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R422	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R423	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R424	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R425	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R501	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R502	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R503	1-216-119-00	METAL GLAZE	820K	5%	1/10W	
R504	1-216-119-00	METAL GLAZE	820K	5%	1/10W	
R505	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R506	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R507	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R508	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R509	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R510	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R511	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R512	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R513	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R514	1-216-031-00	METAL GLAZE	180	5%	1/10W	
R515	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R516	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R517	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R518	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R519	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R520	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R521	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R522	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R523	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R524	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R525	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R526	1-216-029-00	METAL GLAZE	150	5%	1/10W	

QHD **Y**

REF.NO.	PART NO.	DESCRIPTION				REMARK
R527	1-216-029-00	METAL GLAZE	150	5%	1/10W	

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REF.NO.	PART NO.	DESCRIPTION
	*A-1394-215-A	Y BOARD, COMPLETE
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	*1-526-659-00	SOCKET, IC (DP) 28P
	*1-526-950-11	SOCKET, IC 64P
	*1-568-984-11	CONNECTOR, MALE 96P

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
C1	1-124-927-11	ELECT	4.7MF	20%	50V	
C2	1-124-927-11	ELECT	4.7MF	20%	50V	
C3	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C4	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C5	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C6	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C7	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C8	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C9	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C10	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C11	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C12	1-163-105-00	CERAMIC CHIP	33PF	5%	50V	
C13	1-163-105-00	CERAMIC CHIP	33PF	5%	50V	
C14	1-163-036-00	CERAMIC CHIP	0.068MF		50V	
C15	1-163-036-00	CERAMIC CHIP	0.068MF		50V	
C16	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C17	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C18	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C19	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C20	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C21	1-163-093-00	CERAMIC CHIP	10PF	5%	50V	
C22	1-163-093-00	CERAMIC CHIP	10PF	5%	50V	
C23	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C24	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C25	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C26	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C27	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C28	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C29	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C30	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C31	1-163-119-00	CERAMIC CHIP	120PF	5%	50V	
C32	1-163-119-00	CERAMIC CHIP	120PF	5%	50V	
C33	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C34	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C35	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C36	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C37	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C38	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C39	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C40	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C41	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C42	1-124-477-11	ELECT	47MF	20%	16V	
C43	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C44	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C45	1-163-090-00	CERAMIC CHIP	7PF	0.25PF	50V	
C46	1-163-099-00	CERAMIC CHIP	18PF	5%	50V	
C47	1-124-119-00	ELECT	330MF	20%	16V	
C48	1-124-477-11	ELECT	47MF	20%	16V	
C49	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C50	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C51	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C52	1-126-103-11	ELECT	470MF	20%	16V	
C53	1-126-101-11	ELECT	100MF	20%	16V	
C54	1-126-101-11	ELECT	100MF	20%	16V	
C55	1-126-101-11	ELECT	100MF	20%	16V	
C56	1-126-101-11	ELECT	100MF	20%	16V	
C57	1-163-093-00	CERAMIC CHIP	10PF	5%	50V	
C58	1-163-093-00	CERAMIC CHIP	10PF	5%	50V	
C59	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C60	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C61	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C62	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C63	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C64	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C65	1-163-036-00	CERAMIC CHIP	0.068MF		50V	
C66	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C67	1-124-119-00	ELECT	330MF	20%	16V	
C68	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C69	1-163-121-00	CERAMIC CHIP	150PF	5%	50V	
C70	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C71	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C72	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C73	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C74	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C75	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C76	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C77	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V	

<DIODE>

REF.NO.	PART NO.	DESCRIPTION
D1	8-719-971-20	DIODE ERC38-06
D2	8-719-971-20	DIODE ERC38-06
D3	8-719-104-34	DIODE 1S2836
D4	8-719-800-60	DIODE TLR214
D5	8-719-911-19	DIODE 1SS119

<IC>

REF.NO.	PART NO.	DESCRIPTION
IC1	8-759-320-49	IC HD64180R1P8
IC2	8-759-746-99	IC MBM27C512-25
IC3	8-752-328-19	IC CXK5864BM-12L
IC4	8-759-748-05	IC UPD28C64C-20
IC5	8-759-925-80	IC TC74HC14F
IC6	8-759-206-28	IC TC74HC123F
IC7	8-759-008-21	IC MC74HC541F
IC8	8-759-008-21	IC MC74HC541F
IC9	8-759-995-97	IC MB8855-1314N
IC10	8-759-984-56	IC MB670840PF
IC11	8-759-984-59	IC MB654842UPF
IC12	8-759-984-58	IC MB671469PF
IC13	8-759-984-57	IC MB605195PF
IC14	8-752-322-10	IC CXK5814P-45L
IC15	8-752-333-84	IC CXK3864-040M
IC16	8-752-333-85	IC CXK3864-041M
IC17	8-752-333-86	IC CXK3864-042M
IC18	8-759-301-24	IC HD10124
IC19	8-759-301-24	IC HD10124
IC20	8-752-306-51	IC CX23065A
IC21	8-759-911-24	IC SN74S124N
IC22	8-759-100-93	IC UPC393G2
IC23	8-759-031-50	IC MC74F00M
IC24	8-759-008-57	IC MC34051P
IC25	8-759-100-93	IC UPC393G2
IC26	8-759-204-94	IC TC74HC00F
IC27	8-759-925-98	IC SN74HC107NS
IC28	8-759-204-94	IC TC74HC00F

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION				REMARK
IC29	8-759-206-28	IC TC74HC123F				
		<COIL>				
L1	1-459-155-00	COIL (WITH CORE) 45UH				
L2	1-459-155-00	COIL (WITH CORE) 45UH				
L3	1-459-155-00	COIL (WITH CORE) 45UH				
L4	1-459-155-00	COIL (WITH CORE) 45UH				
		<IC LINK>				
PS1 ⚠	1-532-679-00	LINK, IC				
PS2 ⚠	1-532-679-00	LINK, IC				
		<TRANSISTOR>				
Q1	8-729-230-46	TRANSISTOR 2SA1162-YG				
Q2	8-729-271-23	TRANSISTOR 2SC2712				
Q3	8-729-230-46	TRANSISTOR 2SA1162-YG				
Q4	8-729-230-46	TRANSISTOR 2SA1162-YG				
Q5	8-729-271-23	TRANSISTOR 2SC2712				
Q6	8-729-271-23	TRANSISTOR 2SC2712				
Q7	8-729-271-23	TRANSISTOR 2SC2712				
		<RESISTOR>				
R1	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R2	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R3	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R4	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R5	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R6	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R7	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R8	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R9	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R10	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R11	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R12	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R13	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R14	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R15	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R17	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R18	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R19	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R20	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R21	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R22	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R23	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R24	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R25	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R26	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R27	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R28	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R29	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R30	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R31	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R32	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R33	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R34	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R36	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R37	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R38	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R39	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R40	1-216-037-00	METAL GLAZE	330	5%	1/10W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R41	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R42	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R43	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R44	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R45	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R46	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R47	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R48	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R49	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R50	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R51	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R52	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R53	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R54	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R55	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R56	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R57	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R58	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R59	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R60	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R61	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R62	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R63	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R64	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R65	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R66	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R67	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R68	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R69	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R70	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R71	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R72	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R73	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R74	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R75	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R76	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R77	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R78	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R79	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R80	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R81	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R82	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R83	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R84	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R85	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R86	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R87	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R88	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R89	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R90	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R91	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R92	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R93	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R94	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R95	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R96	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R97	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R98	1-216-129-00	METAL GLAZE	2.2M	5%	1/10W	
R99	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R100	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R101	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R102	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R103	1-216-085-00	METAL GLAZE	33K	5%	1/10W	

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> The components identified by shading and mark ⚠ are critical for safety.
> Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION				REMARK
R104	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R105	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R106	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R107	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R108	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R109	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R110	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R111	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R112	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R113	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R114	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R115	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R116	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R117	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R118	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R119	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R120	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R121	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R122	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R123	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R124	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R125	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R126	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R127	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R128	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R129	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R130	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R131	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R132	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R133	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R134	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R135	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R136	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R137	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R138	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R139	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R140	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R141	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R142	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R143	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R144	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R145	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R146	1-216-677-11	METAL CHIP	12K	0.50%	1/10W	
R147	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R148	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R149	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R150	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R151	1-216-121-00	METAL GLAZE	1M	5%	1/10W	

<SWITCH>

REF.NO.	PART NO.	DESCRIPTION
SW1	1-570-598-11	SWITCH, DIP
SW2	1-570-204-21	SWITCH, KEY BOARD

<CRYSTAL>

REF.NO.	PART NO.	DESCRIPTION
X1	1-567-812-11	VIBRATOR, CERAMIC
X2	1-567-252-11	VIBRATOR, CRYSTAL
X3	1-567-192-11	OSCILLATOR, CERAMIC
X4	1-577-353-11	VIBRATOR, CERAMIC

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*A-1499-937-A X BOARD, COMPLETE
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REF.NO.	PART NO.	DESCRIPTION	REMARK
	*1-568-982-11	CONNECTOR, FEMALE 96P	
	*1-568-983-11	CONNECTOR, FEMALE 96P	
	*1-568-984-11	CONNECTOR, MALE 96P	
	*4-353-708-00	HOOK, FINGER	

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M1 BOARD (SOPS1008D)
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PART NO.	DESCRIPTION
1-543-060-00	CORE
9-983-709-01	RUBBER (STB-CR07), RADIATION
*2-643-841-01	SHEET, INSULATING
*4-873-829-02	HEAT SINK

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION			
C108 ⚠	1-161-743-12	CERAMIC	0.0047MF		400V
C109	1-125-593-11	ELECT(BLOCK)	2000MF	20%	250V
C110	1-125-593-11	ELECT(BLOCK)	2000MF	20%	250V
C111	1-125-593-11	ELECT(BLOCK)	2000MF	20%	250V
C112	1-125-593-11	ELECT(BLOCK)	2000MF	20%	250V
C114	1-136-626-11	FILM	1MF	10%	250V
C115	1-136-626-11	FILM	1MF	10%	250V
C116	1-136-626-11	FILM	1MF	10%	250V
C117	1-136-626-11	FILM	1MF	10%	250V
C118	1-161-915-00	CERAMIC	0.001MF	10%	500V
C119	1-161-915-00	CERAMIC	0.001MF	10%	500V
C120	1-136-202-11	FILM	0.33MF	5%	400V
C121	1-136-202-11	FILM	0.33MF	5%	400V
C122	1-161-741-00	CERAMIC	0.001MF	10%	400V
C124 ⚠	1-161-743-12	CERAMIC	0.0047MF		400V
C125 ⚠	1-161-743-12	CERAMIC	0.0047MF		400V
C126 ⚠	1-161-743-12	CERAMIC	0.0047MF		400V
C201	1-161-909-91	CERAMIC	330PF	10%	500V
C202	1-161-909-91	CERAMIC	330PF	10%	500V
C203	1-161-909-91	CERAMIC	330PF	10%	500V
C204	1-161-909-91	CERAMIC	330PF	10%	500V
C205	1-162-558-11	CERAMIC	100PF	10%	2KV
C206	1-162-558-11	CERAMIC	100PF	10%	2KV
C207	1-162-558-11	CERAMIC	100PF	10%	2KV
C208	1-162-558-11	CERAMIC	100PF	10%	2KV
C209	1-162-131-11	CERAMIC	220PF	10%	2KV
C210	1-162-131-11	CERAMIC	220PF	10%	2KV
C211	1-162-131-11	CERAMIC	220PF	10%	2KV
C212	1-162-131-11	CERAMIC	220PF	10%	2KV
C213	1-126-911-11	ELECT	47MF	0	200V
C214	1-126-911-11	ELECT	47MF	0	200V
C215	1-126-913-11	ELECT	220MF	0	160V
C216	1-126-913-11	ELECT	220MF	0	160V
C217	1-126-912-11	ELECT	33MF	0	250V
C218	1-126-913-11	ELECT	220MF	0	160V
C219	1-136-153-00	MYLAR	0.01MF	10%	50V
C221	1-136-163-00	MYLAR	0.068MF	10%	50V
C222	1-136-155-00	MYLAR	0.015MF	10%	50V
C223	1-136-155-00	MYLAR	0.015MF	10%	50V
C224	1-126-911-11	ELECT	47MF	0	200V
C225	1-123-875-11	ELECT	10MF	20%	50V
C226	1-124-478-11	ELECT	100MF	20%	25V

The components identified by shading and mark ⚠ are critical for safety.
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REF.NO.	PART NO.	DESCRIPTION				REMARK
C227	1-124-443-00	ELECT	100MF	20%	10V	
C228	1-136-165-00	MYLAR	0.1MF	10%	50V	
C229	1-136-165-00	MYLAR	0.1MF	10%	50V	
C230	1-124-902-00	ELECT	0.47MF	20%	50V	
C231	1-161-925-00	CERAMIC	100PF	10%	500V	
C232	1-161-925-00	CERAMIC	100PF	10%	500V	

<CONNECTOR>

REF.NO.	PART NO.	DESCRIPTION
CN103	*1-535-419-00	TAB, FASTEN (PCB)
CN104	*1-535-419-00	TAB, FASTEN (PCB)
CN106	*1-560-549-00	PIN (WITH V CONNECTOR BASE) 3P
CN107	*1-535-419-00	TAB, FASTEN (PCB)
CN108	*1-535-419-00	TAB, FASTEN (PCB)
CN109	*1-535-419-00	TAB, FASTEN (PCB)
CN110	*1-535-419-00	TAB, FASTEN (PCB)
CN111	*1-535-419-00	TAB, FASTEN (PCB)
CN202	*1-560-894-00	PIN, CONNECTOR 6P

<DIODE>

REF.NO.	PART NO.	DESCRIPTION
D101 ⚠	8-719-500-27	DIODE S15VB60
D102	1-807-913-21	DIODE 11EQS04
D103	1-807-913-21	DIODE 11EQS04
D201	8-719-971-20	DIODE ERC38-06
D202	8-719-971-20	DIODE ERC38-06
D203	8-719-971-20	DIODE ERC38-06
D204	8-719-971-20	DIODE ERC38-06
D205	8-719-979-28	DIODE ESAD39-06C
D206	8-719-979-29	DIODE ESAD39-06N
D207	8-719-911-55	DIODE U05G
D208	8-719-911-55	DIODE U05G
D209	8-719-109-89	DIODE RD5.6ES-B2
D210	8-719-911-19	DIODE 1SS119
D211	8-719-911-19	DIODE 1SS119
D213	8-719-110-88	DIODE RD39ES-B2
D214	8-719-110-88	DIODE RD39ES-B2
D215	8-719-911-19	DIODE 1SS119
D216	8-719-911-19	DIODE 1SS119
D218	8-719-912-20	DIODE 1SS120
D219	8-719-912-20	DIODE 1SS120
D220	8-719-911-19	DIODE 1SS119

<FUSE>

REF.NO.	PART NO.	DESCRIPTION
F103 ⚠	1-532-496-11	FUSE, THERMO 10A/250V

<IC>

REF.NO.	PART NO.	DESCRIPTION
IC201	8-759-135-80	IC UPC358C
IC202	8-759-908-15	IC TL431CLP
IC203	8-759-135-80	IC UPC358C
IC204	8-759-908-15	IC TL431CLP

<COIL>

REF.NO.	PART NO.	DESCRIPTION
L104	1-424-058-11	LFT
L201	1-412-263-11	COIL, CHOKE (CCLU160708Z) 20.5MMH
L202	1-412-264-11	COIL, CHOKE (CCL U270817Z) 1.4MMH
L203	1-408-949-11	COIL (WITH CORE) (CHOKE COIL)
L204	1-421-370-00	COIL, CHOKE

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION
Q101	1-807-107-11	TRANSISTOR 2SK827
Q102	1-807-107-11	TRANSISTOR 2SK827
Q103	1-807-107-11	TRANSISTOR 2SK827
Q104	1-807-107-11	TRANSISTOR 2SK827
Q105	8-729-113-33	TRANSISTOR 2SB733-4
Q106	8-729-113-33	TRANSISTOR 2SB733-4
Q201	8-729-821-53	TRANSISTOR 2SC3042-N
Q202	8-729-105-97	TRANSISTOR 2SA1156-2K
Q203	8-729-175-22	TRANSISTOR 2SC2752 -L
Q204	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q205	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q206	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q207	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q208	8-729-208-04	TRANSISTOR 2SK422
Q209	8-729-208-04	TRANSISTOR 2SK422

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
R102 ⚠	1-205-916-11	WIREWOUND	5	5%	20W	F
R103 ⚠	1-205-916-11	WIREWOUND	5	5%	20W	F
R104	1-205-624-00	WIREWOUND	100	5%	5W	F
R105	1-247-696-11	CARBON	47	5%	1/4W	F
R106	1-247-696-11	CARBON	47	5%	1/4W	F
R107	1-247-696-11	CARBON	47	5%	1/4W	F
R108	1-247-696-11	CARBON	47	5%	1/4W	F
R109	1-249-421-11	CARBON	2.2K	5%	1/4W	
R110	1-249-421-11	CARBON	2.2K	5%	1/4W	
R111	1-205-624-00	WIREWOUND	100	5%	5W	F
R201	1-205-625-00	WIREWOUND	220	5%	5W	F
R202	1-205-625-00	WIREWOUND	220	5%	5W	F
R203	1-249-429-11	CARBON	10K	5%	1/4W	
R204	1-249-441-11	CARBON	100K	5%	1/4W	
R205	1-249-441-11	CARBON	100K	5%	1/4W	
R206	1-249-405-11	CARBON	100	5%	1/4W	
R207	1-249-417-11	CARBON	1K	5%	1/4W	
R208	1-215-477-00	METAL	220K	1%	1/6W	
R209	1-215-477-00	METAL	220K	1%	1/6W	
R210	1-215-445-00	METAL	10K	1%	1/6W	
R212	1-205-676-11	WIREWOUND	4.7	5%	5W	F
R213	1-215-477-00	METAL	220K	1%	1/6W	
R214	1-215-477-00	METAL	220K	1%	1/6W	
R215	1-215-445-00	METAL	10K	1%	1/6W	
R216	1-249-424-11	CARBON	3.9K	5%	1/4W	
R217	1-247-887-00	CARBON	220K	5%	1/4W	
R218	1-247-887-00	CARBON	220K	5%	1/4W	
R219	1-247-895-00	CARBON	470K	5%	1/4W	
R220	1-247-903-00	CARBON	1M	5%	1/4W	
R221	1-249-419-11	CARBON	1.5K	5%	1/4W	
R222	1-249-417-11	CARBON	1K	5%	1/4W	
R223	1-249-426-11	CARBON	5.6K	5%	1/4W	

- ⋇ : Selected to yield optimum performance.

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

M1 **C1**

REF.NO.	PART NO.	DESCRIPTION				REMARK
R224	1-249-425-11	CARBON	4.7K	5%	1/4W	
R226	1-247-747-11	CARBON	470	5%	1/2W	F
R227	1-247-747-11	CARBON	470	5%	1/2W	F
R228	1-215-431-00	METAL	2.7K	1%	1/6W	
⋇ R229	1-215-456-00	METAL	30K	1%	1/6W	
⋇ R229	1-215-457-00	METAL	33K	1%	1/6W	
⋇ R229	1-215-458-00	METAL	36K	1%	1/6W	
⋇ R229	1-215-459-00	METAL	39K	1%	1/6W	
⋇ R229	1-215-460-00	METAL	43K	1%	1/6W	
⋇ R229	1-215-461-00	METAL	47K	1%	1/6W	
⋇ R229	1-215-462-00	METAL	51K	1%	1/6W	
⋇ R229	1-215-463-00	METAL	56K	1%	1/6W	
⋇ R229	1-215-464-00	METAL	62K	1%	1/6W	
R230	1-249-426-11	CARBON	5.6K	5%	1/4W	
R231	1-249-426-11	CARBON	5.6K	5%	1/4W	
R232	1-215-473-00	METAL	150K	1%	1/6W	
R233	1-215-441-00	METAL	6.8K	1%	1/6W	
R234	1-215-469-00	METAL	100K	1%	1/6W	
R235	1-215-469-00	METAL	100K	1%	1/6W	
R236	1-215-436-00	METAL	4.3K	1%	1/6W	
R237	1-215-902-11	METAL OXIDE	47K	5%	2W	F
R238	1-215-902-11	METAL OXIDE	47K	5%	2W	F
R239	1-205-625-00	WIREWOUND	220	5%	5W	F
R240	1-205-625-00	WIREWOUND	220	5%	5W	F
R241	1-249-432-11	CARBON	18K	5%	1/4W	
R242	1-249-426-11	CARBON	5.6K	5%	1/4W	
R243	1-249-431-11	CARBON	15K	5%	1/4W	
R244	1-249-413-11	CARBON	470	5%	1/4W	
R245	1-249-431-11	CARBON	15K	5%	1/4W	
R246	1-247-893-11	CARBON	390K	5%	1/4W	
R247	1-215-465-00	METAL	68K	1%	1/6W	
R248	1-215-433-00	METAL	3.3K	1%	1/6W	
R249	1-215-465-00	METAL	68K	1%	1/6W	
R250	1-215-465-00	METAL	68K	1%	1/6W	
R251	1-215-433-00	METAL	3.3K	1%	1/6W	
R252	1-215-447-00	METAL	12K	1%	1/6W	
R253	1-215-447-00	METAL	12K	1%	1/6W	
R254	1-215-409-00	METAL	330	1%	1/6W	
R255	1-216-377-11	METAL OXIDE	4.7	5%	2W	F

<VARIABLE RESISTOR>

REF.NO.	PART NO.	DESCRIPTION
RV201	1-228-990-00	RES, ADJ, METAL GLAZE 1K
RV202	1-228-990-00	RES, ADJ, METAL GLAZE 1K

<RELAY>

REF.NO.	PART NO.	DESCRIPTION
RY101⚠	1-515-450-12	RELAY, POWER

<TRANSFORMER>

REF.NO.	PART NO.	DESCRIPTION
T101⚠	1-449-845-11	TRANSFORMER, CONVERTER
T102⚠	1-421-819-11	TRANSFORMER, CURRENT
T103⚠	1-437-188-11	TRANSFORMER, DRIVE
T104⚠	1-437-188-11	TRANSFORMER, DRIVE

<ARRESTER>

REF.NO.	PART NO.	DESCRIPTION
VZ101⚠	1-576-084-11	ARRESTER, GUS TUBE (M2P-470L)

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C1 BOARD (SOPS1008D)
****

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
C51	1-130-471-00	MYLAR	0.001MF	10%	50V	
C52	1-130-471-00	MYLAR	0.001MF	10%	50V	
C53	1-124-902-00	ELECT	0.47MF	20%	50V	
C54	1-124-478-11	ELECT	100MF	20%	25V	
C56	1-136-153-00	MYLAR	0.01MF	10%	50V	
C57	1-136-165-00	MYLAR	0.1MF	10%	50V	
C58	1-124-910-11	ELECT	47MF	20%	50V	
C59	1-124-902-00	ELECT	0.47MF	20%	50V	

<CONNECTOR>

REF.NO.	PART NO.	DESCRIPTION
CN51	*1-560-741-00	PIN, CONNECTOR 12P
CN52	*1-564-517-11	PLUG, CONNECTOR 2P

<DIODE>

REF.NO.	PART NO.	DESCRIPTION
D51	1-807-913-21	DIODE 11EQS04
D52	1-807-913-21	DIODE 11EQS04
D53	1-807-913-21	DIODE 11EQS04
D54	1-807-913-21	DIODE 11EQS04
D55	1-807-913-21	DIODE 11EQS04
D56	1-807-913-21	DIODE 11EQS04
D57	8-719-911-19	DIODE 1SS119
D58	8-719-107-87	THYRISTOR 03P2M
D59	8-719-911-19	DIODE 1SS119

<IC>

REF.NO.	PART NO.	DESCRIPTION
IC51	8-759-906-62	IC MB3759-SNY

<COIL>

REF.NO.	PART NO.	DESCRIPTION	
L51	1-410-466-41	INDUCTOR	4.7UH

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION
Q53	8-729-119-76	TRANSISTOR 2SA1175-HFE

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION			
R51	1-249-410-11	CARBON	270	5%	1/4W
R52	1-249-417-11	CARBON	1K	5%	1/4W
R53	1-249-417-11	CARBON	1K	5%	1/4W
R54	1-249-417-11	CARBON	1K	5%	1/4W
R56	1-249-433-11	CARBON	22K	5%	1/4W
R57	1-247-897-11	CARBON	560K	5%	1/4W
R58	1-249-437-11	CARBON	47K	5%	1/4W
R59	1-249-405-11	CARBON	100	5%	1/4W
R60	1-247-885-00	CARBON	180K	5%	1/4W
R61	1-249-421-11	CARBON	2.2K	5%	1/4W
R62	1-249-421-11	CARBON	2.2K	5%	1/4W
R63	1-249-421-11	CARBON	2.2K	5%	1/4W
R64	1-247-895-00	CARBON	470K	5%	1/4W
R65	1-249-425-11	CARBON	4.7K	5%	1/4W
R66	1-249-426-11	CARBON	5.6K	5%	1/4W
R67	1-249-425-11	CARBON	4.7K	5%	1/4W
R68	1-249-415-11	CARBON	680	5%	1/4W
R69	1-249-405-11	CARBON	100	5%	1/4W
R70	1-249-421-11	CARBON	2.2K	5%	1/4W
R71	1-215-469-00	METAL	100K	1%	1/6W

REF. NO.	PART NO.	DESCRIPTION			REMARK

M2 BOARD (SOPS1008D)
****

1-543-060-00 CORE

<CAPACITOR>

REF. NO.	PART NO.	DESCRIPTION			
C151	1-125-592-11	ELECT(BLOCK)	270MF	20%	400V
C152	1-136-626-11	FILM	1MF	10%	250V
C153	1-136-626-11	FILM	1MF	10%	250V
C154	1-161-915-00	CERAMIC	0.001MF	10%	500V
C155	1-161-915-00	CERAMIC	0.001MF	10%	500V
C156	1-136-199-00	FILM	0.1MF	10%	400V
C157	1-136-161-00	MYLAR	0.047MF	10%	50V
C158	1-130-475-00	MYLAR	0.0022MF	10%	50V
C165	1-126-233-11	ELECT	22MF	20%	25V
C166	1-136-626-11	FILM	1MF	10%	250V
C167	1-136-626-11	FILM	1MF	10%	250V
C168	1-136-202-11	FILM	0.33MF	5%	400V
C169	1-136-202-11	FILM	0.33MF	5%	400V
C170	1-161-741-00	CERAMIC	0.001MF	10%	400V
C251	1-161-915-00	CERAMIC	0.001MF	10%	500V
C252	1-161-915-00	CERAMIC	0.001MF	10%	500V
C253	1-161-925-00	CERAMIC	100PF	10%	500V
C254	1-161-925-00	CERAMIC	100PF	10%	500V
C255	1-161-925-00	CERAMIC	100PF	10%	500V
C256	1-161-925-00	CERAMIC	100PF	10%	500V
C257	1-161-925-00	CERAMIC	100PF	10%	500V
C258	1-161-925-00	CERAMIC	100PF	10%	500V
C259	1-161-925-00	CERAMIC	100PF	10%	500V
C260	1-161-925-00	CERAMIC	100PF	10%	500V
C261	1-161-925-00	CERAMIC	100PF	10%	500V
C262	1-161-925-00	CERAMIC	100PF	10%	500V
C263	1-161-925-00	CERAMIC	100PF	10%	500V
C264	1-161-925-00	CERAMIC	100PF	10%	500V
C265	1-124-473-11	ELECT	1000MF	20%	10V
C266	1-124-473-11	ELECT	1000MF	20%	10V
C267	1-124-636-00	ELECT	3300MF	20%	25V
C268	1-124-636-00	ELECT	3300MF	20%	25V
C269	1-124-913-11	ELECT	470MF	20%	50V
C270	1-124-913-11	ELECT	470MF	20%	50V
C271	1-124-472-11	ELECT	470MF	20%	6.3V
C272	1-124-472-11	ELECT	470MF	20%	6.3V
C273	1-124-480-11	ELECT	470MF	20%	25V
C274	1-124-480-11	ELECT	470MF	20%	25V
C275	1-124-122-11	ELECT	100MF	20%	50V
C276	1-124-122-11	ELECT	100MF	20%	50V
C278	1-136-159-00	MYLAR	0.033MF	10%	50V
C279	1-136-155-00	MYLAR	0.015MF	10%	50V
C280	1-136-155-00	MYLAR	0.015MF	10%	50V
C281	1-136-165-00	MYLAR	0.1MF	10%	50V
C282	1-136-165-00	MYLAR	0.1MF	10%	50V
C283	1-124-442-00	ELECT	330MF	20%	6.3V
C284	1-124-556-11	ELECT	2200MF	20%	16V
C285	1-124-478-11	ELECT	100MF	20%	25V
C286	1-124-360-00	ELECT	1000MF	20%	16V
C287	1-123-875-11	ELECT	10MF	20%	50V
C288	1-126-103-11	ELECT	470MF	20%	16V
C289	1-124-902-00	ELECT	0.47MF	20%	50V
C290	1-124-478-11	ELECT	100MF	20%	25V
C291	1-136-165-00	MYLAR	0.1MF	10%	50V
C292	1-136-165-00	MYLAR	0.1MF	10%	50V
C293	1-161-925-00	CERAMIC	100PF	10%	500V
C294	1-161-925-00	CERAMIC	100PF	10%	500V
C295	1-161-925-00	CERAMIC	100PF	10%	500V
C296	1-161-925-00	CERAMIC	100PF	10%	500V
C297	1-161-925-00	CERAMIC	100PF	10%	500V
C298	1-161-925-00	CERAMIC	100PF	10%	500V

<CONNECTOR>

REF. NO.	PART NO.	DESCRIPTION
CN151	*1-560-549-00	PIN (WITH V CONNECTOR BASE) 3P
CN252	*1-560-894-00	PIN, CONNECTOR 6P
CN254	*1-560-891-00	PIN, CONNECTOR 3P
CN255	*1-560-891-00	PIN, CONNECTOR 3P

<DIODE>

REF. NO.	PART NO.	DESCRIPTION
D151	1-807-913-21	DIODE 11EQS04
D152	1-807-913-21	DIODE 11EQS04
D153	8-719-300-70	DIODE RH-1C
D154	8-719-912-20	DIODE 1SS120
D155	8-719-912-20	DIODE 1SS120
D156	8-719-109-89	DIODE RD5.6ES-B2
D158	8-719-912-20	DIODE 1SS120
D159	8-719-912-20	DIODE 1SS120
D251	8-719-302-81	DIODE FMG-24S
D252	1-807-793-11	DIODE FML-22S
D253	8-719-302-60	DIODE FML-32S
D254	1-807-793-21	DIODE FML-22R
D255	1-807-793-21	DIODE FML-22R
D256	8-719-302-82	DIODE FMG-24R
D265	8-719-110-88	DIODE RD39ES-B2
D266	8-719-110-88	DIODE RD39ES-B2
D267	8-719-200-02	DIODE 10E-2
D268	8-719-200-02	DIODE 10E-2
D270	8-719-911-19	DIODE 1SS119
D271	8-719-911-19	DIODE 1SS119
D272	8-719-911-19	DIODE 1SS119
D273	8-719-911-19	DIODE 1SS119
D274	8-719-911-19	DIODE 1SS119
D275	8-719-911-19	DIODE 1SS119
D276	8-719-109-89	DIODE RD5.6ES-B2
D277	8-719-110-41	DIODE RD15ES-B2
D278	8-719-110-48	DIODE RD18ES-B1
D279	8-719-109-97	DIODE RD6.8ES-B2
D280	8-719-110-33	DIODE RD12ES-B3
D281	1-807-774-11	DIODE AU02A
D282	1-807-913-21	DIODE 11EQS04
D283	8-719-109-84	DIODE RD5.1ES-B1
D284	8-719-109-97	DIODE RD6.8ES-B2
D285	8-719-911-19	DIODE 1SS119
D286	8-719-911-19	DIODE 1SS119

<IC>

REF. NO.	PART NO.	DESCRIPTION
IC251	8-759-908-15	IC TL431CLP
IC252	8-759-135-80	IC UPC358C
IC253	8-759-143-00	IC UPC7805HF

<COIL>

REF. NO.	PART NO.	DESCRIPTION
L151	1-424-058-11	LFT
L251	1-412-266-11	COIL, CHOKE (CCL U230914Z) 136UH
L252	1-412-266-11	COIL, CHOKE (CCL U230914Z) 136UH
L253	1-412-265-11	COIL, CHOKE (CCLU230914Z) 2.25MMH
L254	1-421-465-00	COIL, FERRITE CHOKE 68UH

REF.NO.	PART NO.	DESCRIPTION			REMARK

****

M2 BOARD (SOPS1008D)
****

1-543-060-00 CORE

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION			
C151	1-125-592-11	ELECT(BLOCK)	270MF	20%	400V
C152	1-136-626-11	FILM	1MF	10%	250V
C153	1-136-626-11	FILM	1MF	10%	250V
C154	1-161-915-00	CERAMIC	0.001MF	10%	500V
C155	1-161-915-00	CERAMIC	0.001MF	10%	500V
C156	1-136-199-00	FILM	0.1MF	10%	400V
C157	1-136-161-00	MYLAR	0.047MF	10%	50V
C158	1-130-475-00	MYLAR	0.0022MF	10%	50V
C165	1-126-233-11	ELECT	22MF	20%	25V
C166	1-136-626-11	FILM	1MF	10%	250V
C167	1-136-626-11	FILM	1MF	10%	250V
C168	1-136-202-11	FILM	0.33MF	5%	400V
C169	1-136-202-11	FILM	0.33MF	5%	400V
C170	1-161-741-00	CERAMIC	0.001MF	10%	400V
C251	1-161-915-00	CERAMIC	0.001MF	10%	500V
C252	1-161-915-00	CERAMIC	0.001MF	10%	500V
C253	1-161-925-00	CERAMIC	100PF	10%	500V
C254	1-161-925-00	CERAMIC	100PF	10%	500V
C255	1-161-925-00	CERAMIC	100PF	10%	500V
C256	1-161-925-00	CERAMIC	100PF	10%	500V
C257	1-161-925-00	CERAMIC	100PF	10%	500V
C258	1-161-925-00	CERAMIC	100PF	10%	500V
C259	1-161-925-00	CERAMIC	100PF	10%	500V
C260	1-161-925-00	CERAMIC	100PF	10%	500V
C261	1-161-925-00	CERAMIC	100PF	10%	500V
C262	1-161-925-00	CERAMIC	100PF	10%	500V
C263	1-161-925-00	CERAMIC	100PF	10%	500V
C264	1-161-925-00	CERAMIC	100PF	10%	500V
C265	1-124-473-11	ELECT	1000MF	20%	10V
C266	1-124-473-11	ELECT	1000MF	20%	10V
C267	1-124-636-00	ELECT	3300MF	20%	25V
C268	1-124-636-00	ELECT	3300MF	20%	25V
C269	1-124-913-11	ELECT	470MF	20%	50V
C270	1-124-913-11	ELECT	470MF	20%	50V
C271	1-124-472-11	ELECT	470MF	20%	6.3V
C272	1-124-472-11	ELECT	470MF	20%	6.3V
C273	1-124-480-11	ELECT	470MF	20%	25V
C274	1-124-480-11	ELECT	470MF	20%	25V
C275	1-124-122-11	ELECT	100MF	20%	50V
C276	1-124-122-11	ELECT	100MF	20%	50V
C278	1-136-159-00	MYLAR	0.033MF	10%	50V
C279	1-136-155-00	MYLAR	0.015MF	10%	50V
C280	1-136-155-00	MYLAR	0.015MF	10%	50V
C281	1-136-165-00	MYLAR	0.1MF	10%	50V
C282	1-136-165-00	MYLAR	0.1MF	10%	50V
C283	1-124-442-00	ELECT	330MF	20%	6.3V
C284	1-124-556-11	ELECT	2200MF	20%	16V
C285	1-124-478-11	ELECT	100MF	20%	25V
C286	1-124-360-00	ELECT	1000MF	20%	16V
C287	1-123-875-11	ELECT	10MF	20%	50V
C288	1-126-103-11	ELECT	470MF	20%	16V
C289	1-124-902-00	ELECT	0.47MF	20%	50V
C290	1-124-478-11	ELECT	100MF	20%	25V
C291	1-136-165-00	MYLAR	0.1MF	10%	50V
C292	1-136-165-00	MYLAR	0.1MF	10%	50V
C293	1-161-925-00	CERAMIC	100PF	10%	500V
C294	1-161-925-00	CERAMIC	100PF	10%	500V
C295	1-161-925-00	CERAMIC	100PF	10%	500V
C296	1-161-925-00	CERAMIC	100PF	10%	500V
C297	1-161-925-00	CERAMIC	100PF	10%	500V
C298	1-161-925-00	CERAMIC	100PF	10%	500V

<CONNECTOR>

REF.NO.	PART NO.	DESCRIPTION
CN151	*1-560-549-00	PIN (WITH V CONNECTOR BASE) 3P
CN252	*1-560-894-00	PIN, CONNECTOR 6P
CN254	*1-560-891-00	PIN, CONNECTOR 3P
CN255	*1-560-891-00	PIN, CONNECTOR 3P

<DIODE>

REF.NO.	PART NO.	DESCRIPTION
D151	1-807-913-21	DIODE 11EQS04
D152	1-807-913-21	DIODE 11EQS04
D153	8-719-300-70	DIODE RH-1C
D154	8-719-912-20	DIODE 1SS120
D155	8-719-912-20	DIODE 1SS120
D156	8-719-109-89	DIODE RD5.6ES-B2
D158	8-719-912-20	DIODE 1SS120
D159	8-719-912-20	DIODE 1SS120
D251	8-719-302-81	DIODE FMG-24S
D252	1-807-793-11	DIODE FML-22S
D253	8-719-302-60	DIODE FML-32S
D254	1-807-793-21	DIODE FML-22R
D255	1-807-793-21	DIODE FML-22R
D256	8-719-302-82	DIODE FMG-24R
D265	8-719-110-88	DIODE RD39ES-B2
D266	8-719-110-88	DIODE RD39ES-B2
D267	8-719-200-02	DIODE 10E-2
D268	8-719-200-02	DIODE 10E-2
D270	8-719-911-19	DIODE 1SS119
D271	8-719-911-19	DIODE 1SS119
D272	8-719-911-19	DIODE 1SS119
D273	8-719-911-19	DIODE 1SS119
D274	8-719-911-19	DIODE 1SS119
D275	8-719-911-19	DIODE 1SS119
D276	8-719-109-89	DIODE RD5.6ES-B2
D277	8-719-110-41	DIODE RD15ES-B2
D278	8-719-110-48	DIODE RD18ES-B1
D279	8-719-109-97	DIODE RD6.8ES-B2
D280	8-719-110-33	DIODE RD12ES-B3
D281	1-807-774-11	DIODE AU02A
D282	1-807-913-21	DIODE 11EQS04
D283	8-719-109-84	DIODE RD5.1ES-B1
D284	8-719-109-97	DIODE RD6.8ES-B2
D285	8-719-911-19	DIODE 1SS119
D286	8-719-911-19	DIODE 1SS119

<IC>

REF.NO.	PART NO.	DESCRIPTION
IC251	8-759-908-15	IC TL431CLP
IC252	8-759-135-80	IC UPC358C
IC253	8-759-143-00	IC UPC7805HF

<COIL>

REF.NO.	PART NO.	DESCRIPTION
L151	1-424-058-11	LFT
L251	1-412-266-11	COIL,CHOKE (CCL U230914Z)136UH
L252	1-412-266-11	COIL,CHOKE (CCL U230914Z)136UH
L253	1-412-265-11	COIL,CHOKE(CCLU230914Z)2.25MMH
L254	1-421-465-00	COIL, FERRITE CHOKE 68UH

M2 **C2**

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION				REMARK
L255	1-421-370-00	COIL, CHOKE				
L256	1-421-370-00	COIL, CHOKE				
L257	1-421-370-00	COIL, CHOKE				
L258	1-421-370-00	COIL, CHOKE				
L259	1-421-465-00	COIL, FERRITE CHOKE 68UH				

<IC LINK>

REF.NO.	PART NO.	DESCRIPTION
PS151⚠	1-532-605-11	LINK, IC 0.4A
PS251⚠	1-532-679-11	LINK, IC 0.6A

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION
Q151	1-807-107-11	TRANSISTOR 2SK827
	9-983-709-01	RUBBER (STB-CR07), RADIATION; Q151
Q152	1-807-107-11	TRANSISTOR 2SK827
	9-983-709-01	RUBBER (STB-CR07), RADIATION; Q152
Q153	8-729-113-33	TRANSISTOR 2SB733-4
Q154	8-729-113-33	TRANSISTOR 2SB733-4
Q155	8-729-802-08	TRANSISTOR 2SC3150
Q156	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q251	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q252	8-729-188-23	TRANSISTOR 2SD882-P
	9-983-709-01	RUBBER (STB-CR07), RADIATION; Q252
Q253	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q254	8-729-140-97	TRANSISTOR 2SB734-34
Q255	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q256	8-729-208-04	TRANSISTOR 2SK422
Q257	8-729-208-04	TRANSISTOR 2SK422
Q258	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q259	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q260	8-729-119-78	TRANSISTOR 2SC2785-HFE

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
R151	1-205-622-00	WIREWOUND	33	5%	5W	F
R152	1-247-696-11	CARBON	47	5%	1/4W	F
R153	1-247-696-11	CARBON	47	5%	1/4W	F
R154	1-247-717-11	CARBON	2.2K	5%	1/4W	
R155	1-247-717-11	CARBON	2.2K	5%	1/4W	
R156	1-215-902-11	METAL OXIDE	47K	5%	2W	F
R157	1-215-902-11	METAL OXIDE	47K	5%	2W	F
R158	1-246-539-00	CARBON	560K	5%	1/4W	
R159	1-246-539-00	CARBON	560K	5%	1/4W	
R160	1-247-733-11	CARBON	33	5%	1/2W	
R161	1-247-713-11	CARBON	1K	5%	1/4W	
R162	1-249-407-11	CARBON	150	5%	1/4W	
R163	1-249-390-11	CARBON	5.6	5%	1/4W	
R164	1-249-405-11	CARBON	100	5%	1/4W	
R165	1-247-741-11	CARBON	150	5%	1/2W	F
R166	1-249-393-11	CARBON	10	5%	1/4W	
R251	1-205-631-00	WIREWOUND	15	5%	5W	F
R252	1-205-631-00	WIREWOUND	15	5%	5W	F
R253	1-216-359-00	METAL OXIDE	6.8	5%	1W	F
R254	1-247-747-11	CARBON	470	5%	1/2W	
R255	1-247-747-11	CARBON	470	5%	1/2W	
R256	1-249-434-11	CARBON	27K	5%	1/4W	
R258	1-249-437-11	CARBON	47K	5%	1/4W	
R259	1-249-435-11	CARBON	33K	5%	1/4W	
R260	1-249-417-11	CARBON	1K	5%	1/4W	
R261	1-215-424-00	METAL	1.3K	1%	1/6W	
R262	1-249-417-11	CARBON	1K	5%	1/4W	
R263	1-215-452-00	METAL	20K	1%	1/6W	
R264	1-249-417-11	CARBON	1K	5%	1/4W	
R265	1-215-448-00	METAL	13K	1%	1/6W	
R266	1-215-420-00	METAL	910	1%	1/6W	
R267	1-205-911-11	WIREWOUND	10	5%	5W	F
R268	1-247-711-11	CARBON	680	5%	1/4W	
R269	1-247-700-11	CARBON	100	5%	1/4W	
R270	1-215-430-00	METAL	2.4K	1%	1/6W	
R271	1-249-421-11	CARBON	2.2K	5%	1/4W	
R272	1-249-397-11	CARBON	22	5%	1/4W	
R273	1-249-419-11	CARBON	1.5K	5%	1/4W	
R274	1-249-432-11	CARBON	18K	5%	1/4W	
R275	1-249-421-11	CARBON	2.2K	5%	1/4W	
R276	1-249-421-11	CARBON	2.2K	5%	1/4W	
R277	1-249-421-11	CARBON	2.2K	5%	1/4W	
R278	1-249-429-11	CARBON	10K	5%	1/4W	
R279	1-249-429-11	CARBON	10K	5%	1/4W	
R280	1-249-417-11	CARBON	1K	5%	1/4W	
R281	1-249-429-11	CARBON	10K	5%	1/4W	
R282	1-249-429-11	CARBON	10K	5%	1/4W	
R283	1-249-431-11	CARBON	15K	5%	1/4W	
R284	1-249-429-11	CARBON	10K	5%	1/4W	
R285	1-249-417-11	CARBON	1K	5%	1/4W	
R286	1-249-429-11	CARBON	10K	5%	1/4W	
R287	1-249-429-11	CARBON	10K	5%	1/4W	
R288	1-249-431-11	CARBON	15K	5%	1/4W	
R289	1-249-429-11	CARBON	10K	5%	1/4W	

<VARIABLE RESISTOR>

REF.NO.	PART NO.	DESCRIPTION
RV251	1-228-990-00	RES, ADJ, METAL GLAZE 1K

<TRANSFORMER>

REF.NO.	PART NO.	DESCRIPTION
T151⚠	1-449-846-11	TRANSFORMER, CONVERTER
T152⚠	1-421-819-11	TRANSFORMER, CURRENT
T153⚠	1-437-188-11	TRANSFORMER, DRIVE
T154⚠	1-437-188-11	TRANSFORMER, DRIVE
T155⚠	1-449-847-11	TRANSFORMER, CONVERTER

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C2 BOARD (SOPS1008D)
****

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION			
C51	1-130-471-00	MYLAR	0.001MF	10%	50V
C52	1-130-471-00	MYLAR	0.001MF	10%	50V
C53	1-124-902-00	ELECT	0.47MF	20%	50V
C54	1-124-478-11	ELECT	100MF	20%	25V
C55	1-130-471-00	FILM	0.001MF	5%	50V
C56	1-130-481-00	MYLAR	0.0068MF	10%	50V
C57	1-136-165-00	MYLAR	0.1MF	10%	50V
C58	1-123-875-11	ELECT	10MF	20%	50V
C59	1-123-875-11	ELECT	10MF	20%	50V

<CONNECTOR>

REF.NO.	PART NO.	DESCRIPTION
CN51	*1-560-741-00	PIN, CONNECTOR 12P
CN52	*1-564-517-11	PLUG, CONNECTOR 2P

<DIODE>

REF.NO.	PART NO.	DESCRIPTION
D51	8-719-911-19	DIODE 1SS119
D52	8-719-911-19	DIODE 1SS119
D53	8-719-911-19	DIODE 1SS119
D54	8-719-911-19	DIODE 1SS119
D55	1-807-913-21	DIODE 11EQS04

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION				REMARK
D56	1-807-913-21	DIODE 11EQS04				
D57	8-719-911-19	DIODE 1SS119				
D58	8-719-107-87	THYRISTOR 03P2M				
D59	8-719-911-19	DIODE 1SS119				
		<IC>				
IC51	8-759-906-62	IC MB3759-SNY				
		<COIL>				
L51	1-410-466-41	INDUCTOR	4.7UH			
		<TRANSISTOR>				
Q53	8-729-119-76	TRANSISTOR 2SA1175-HFE				
		<RESISTOR>				
R51	1-249-411-11	CARBON	330	5%	1/4W	
R52	1-249-414-11	CARBON	560	5%	1/4W	
R53	1-249-417-11	CARBON	1K	5%	1/4W	
R54	1-249-417-11	CARBON	1K	5%	1/4W	
R55	1-215-437-00	METAL	4.7K	1%	1/6W	
R56	1-247-903-00	CARBON	1M	5%	1/4W	
R57	1-247-897-11	CARBON	560K	5%	1/4W	
R58	1-249-433-11	CARBON	22K	5%	1/4W	
R59	1-249-417-11	CARBON	1K	5%	1/4W	
R60	1-249-425-11	CARBON	4.7K	5%	1/4W	
R61	1-249-421-11	CARBON	2.2K	5%	1/4W	
R62	1-249-425-11	CARBON	4.7K	5%	1/4W	
R63	1-249-425-11	CARBON	4.7K	5%	1/4W	
R64	1-247-895-00	CARBON	470K	5%	1/4W	
R65	1-249-425-11	CARBON	4.7K	5%	1/4W	
R66	1-249-423-11	CARBON	3.3K	5%	1/4W	
R67	1-249-426-11	CARBON	5.6K	5%	1/4W	
R68	1-249-415-11	CARBON	680	5%	1/4W	
R69	1-249-405-11	CARBON	100	5%	1/4W	
R70	1-249-421-11	CARBON	2.2K	5%	1/4W	
R71	1-249-427-11	CARBON	6.8K	5%	1/4W	

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MISCELLANEOUS
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PART NO.	DESCRIPTION
⚠.1-236-604-11	FILTER BLOCK, NOISE (M3B BOARD)
⚠.1-238-755-11	RESISTOR ASSY, HIGH-VOLTAGE
⚠.1-413-484-12	REGULATOR, SWITCHING (SOPS1008D)
⚠.1-451-355-12	DEFLECTION YOKE (Y636PJ)
⚠.1-452-429-21	NECK ASSY, PICTURE TUBE (NA366)
⚠.1-452-487-31	NECK ASSY, PICTURE TUBE (NA363A)
1-452-541-11	MAGNET ASSY, FOCUS
⚠.1-453-108-11	DC BLOCK, HIGH-VOLTAGE
⚠.1-453-108-31	DC BLOCK, HIGH-VOLTAGE
1-533-224-11	HOLDER, FUSE (DIA. 5.2)
1-541-702-11	FAN, DC
1-541-703-11	FAN, DC
*1-555-110-00	CABLE, P-P
1-559-865-31	LEAD ASSY, HIGH-VOLTAGE
⚠1-560-222-11	INLET 3P
1-575-092-11	CONNECTOR ASSY, MULTI 14P

REF.NO.	PART NO.	DESCRIPTION			REMARK
C901	⚠.1-136-951-11	CAP, METALIZED FILM 0.1MF	20%	25V	
C902	⚠.1-136-951-11	CAP, METALIZED FILM 0.1MF	20%	25V	
C903	⚠.1-136-951-11	CAP, METALIZED FILM 0.1MF	20%	25V	
F901	⚠.1-532-325-11	FUSE, TIME-LAG 6.3A/250V			
R901	1-202-719-00	RES, SOLID 1.00M	10%	1/2W	
SW901	⚠.1-572-066-11	SWITCH, SEESAW (AC POEWR)			
T902	⚠.1-944-510-12	HARNESS (T)			
V901	⚠.8-736-323-05	PICTURE TUBE (09MH(R))			
V902	⚠.8-736-321-05	PICTURE TUBE (09MH(G))			
V903	⚠.8-736-322-05	PICTURE TUBE (09MH(B))			

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ACCESSORIES AND PACKING MATERIALS
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PART NO.	DESCRIPTION	REMARK
A-1470-893-A	COMMANDER ASSY (RM-1200)	
*A-1499-937-A	X BOARD, COMPLETE	
1-575-100-11	CABLE, MINIATURE PLUG	
⚠.1-575-175-11	CORD SET, POWER	
3-750-749-11	MANUAL, INSTRUCTION	
3-750-750-11	MANUAL, INSTRUCTION	
3-751-149-11	INSTALLATION DIAGRAMS	
*4-384-663-01	BAG, PROTECTION	
*4-384-685-02	BAND	
*4-396-243-01	ANGLE	
*4-396-252-01	JOINT (H)	
*4-396-254-01	HANDLE	
4-396-260-01	BOLT, SOCKET HEXAGON	
4-396-260-21	BOLT, SOCKET HEXAGON	
*4-396-262-01	EYEBOLT	
*4-396-287-01	SPACER	
*4-396-288-01	BOX, ACCESSORY	
*4-396-299-01	SHEET (A), POLYETHYLENE	
*4-396-901-01	PALLET	
*4-396-902-01	LID	
*4-396-903-01	TRAY	
*4-396-904-01	SLEEVE	
*4-396-905-01	CUSHION (LOWER)	
*4-396-908-01	SPACER	
*4-603-966-01	STOPPER (LARGE), SPEED	

HDIH-1200M
RM-1200

SONY®
SERVICE MANUAL

AEP Model
Chassis No. SCC-D16B-A

CORRECTION-1

File this correction with the service manual.

INTRODUCTION

Part No. of the program ROM (IC2) on the Y board was incorrect.
Please use the correct Part No. as below.

☛ : Indicated corrected portion

Page 306 : **SECTION 9 ELECTRICAL PARTS LIST**

Incorrect				Correct			
REF.NO.	PART NO.	DISCRIPTION	REMARK	REF.NO.	PART NO.	DISCRIPTION	REMARK
IC2	8-759-746-99	IC MBM27C512-25		IC2	☛ 8-759-163-64	IC MBM27C512-20-PJY016	

SUPPLEMENT-1

Page 57 : **SECTION 9 ELECTRICAL PARTS LIST**

Incorrect				Correct			
REF.NO.	PART NO.	DISCRIPTION	REMARK	REF.NO.	PART NO.	DISCRIPTION	REMARK
IC2	8-759-092-89	IC MBM27C512P-20-PJY015		IC2	☛ 8-759-163-64	IC MBM27C512-20-PJY016	

MICROFILM

9-978-012-91

Sony Corporation
Display Products Group

English
93EL1511-1
Printed in Japan

HDIH-1200M
RM-1200

SONY SERVICE MANUAL

AEP Model
7074

CORRECTION-2

Correct the service manual as shown below.
File this correction with the service manual.

There were mistaken in the adjustment, therefore correct like below.

☛ : Modification portion

4-13. WHITE BALANCE ADJUSTMENT

2. G2 volume adjustment

10) Press the [MEMORY] key.
11) Press the [GAIN] key and adjust the GAIN data with the arrow keys [◀] and [▶] so that R : 96, G : 140, B : 190.
12) Press the [BIAS] key and adjust the BIAS data with the arrow keys [◀] and [▶] so that R : 128,G : 128, B : 128.
13) Press the [TEST] key and display the pluge signal on the screen.
14) In a dark room, turn the G2 control to adjust the red, green, and glue signal-color brightnesses this way:
    - Adjust so that 0 IRE (background) is the same brightness as – 5 IRE and so + 5 IRE glows slightly.

<Pluge signal>

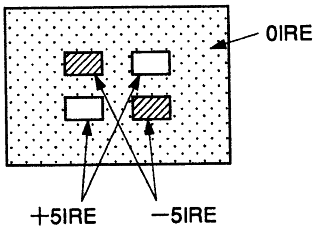
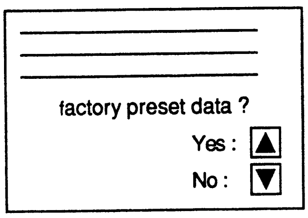


Fig. 27

15) Remove the short on the CF2-3 connector.

4. HDTV1 WHITE BALANCE ADJUSTMENT (6500° K)

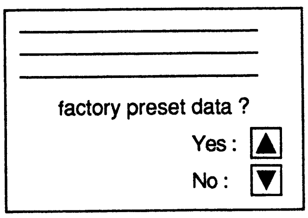
1) Press the [PAGE] key to select "PAGE 4".
2) Press the arrow key to Select "HDTV1"
3) Press the [BIAS] (or [GAIN]) key to set to ADJUSTMENT mode.
4) Press the arrow keys [◀] and [▶] simultaneously and confirm that the messages are displaying in the screen like the figure.



5) Press the arrow key [▲] (This operates memorize the shipment date.)
6) Press the [BIAS] key.
7) Continuing to press [TEST] key to change the screen in all white signal.
8) Minimize the CONT and the BRT.
9) Adjust the blue and the red with using color meter. (minolta CS-100 or the like.) so that
   x : 0.313 ± 0.025
   y : 0.329 ± 0.025
   Must not adjust the GREEN bias by this time.
10) Press the [MEMORY] key.
11) Press the [GAIN] key.
12) Continuing to press the [TEST] key to change the screen in internal signal.
13) Press the [RESET] key so that
   CONT : 80%
   BRT : 50%
14) Adjust the BLUE and the RED with using color meter so that
   x : 0.313 ± 0.015
   y : 0.329 ± 0.015
   Must not adjust the GREEN GAIN by this time.
15) Press the [MEMORY] key.

5. HDTV2 WHITE BALANCE ADJUSTMENT (9300° K)

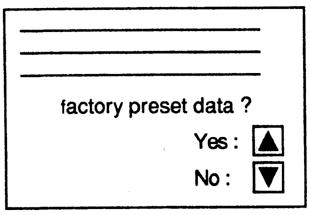
1) Press the [PAGE] key to select "PAGE 4".
2) Press the arrow key to select "HDTV2".
3) Press the [BIAS] (or [GAIN]) key to set to ADJUSTMENT mode.
4) Press the arrow keys [◀] and [▶] simultaneously and confirm that the messages are displaying in the screen like the figure.



5) Press the arrow key ▲. (This operates memorize the shipment date.)
6) Press the BIAS key.
7) Continuing to press the TEST key to change the screen in all white signal
8) Minimize the CONT and the BRT.
9) Adjust the BLUE and the RED with using color meter (minolta CS-100 or the like) so that
   x : 0.284 ± 0.025
   y : 0.297 ± 0.025
   Must not adjust the GREEN BIAS by this time.
10) Press the MEMORY key.
11) Press the GAIN key.
12) Continuing to press the TEST key to change the screen in internal signal.
13) Press the RESET key so that
   CONT : 80%
   BRT : 50%
14) Adjust the GREEN and the RED with using color meter so that
   x : 0.284 ± 0.015
   y : 0.297 ± 0.015
   Must not adjust the BLUE GAIN by this time.
15) Press the MEMORY key.

6. VID1 WHITE BALANCE ADJUSTMENT (6500° K)

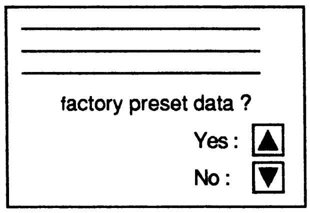
1) Press the PAGE key to select "PAGE 4".
2) Press the arrow key to select "VID1".
3) Press the BIAS (or GAIN) key to set to ADJUSTMENT mode.
4) Press the arrow keys ◀ and ▶ simultaneously and confirm that the messages are displaying in the screen like the figure.



5) Press the arrow key ▲. (This operates memorize the shipment data)
6) Press the BIAS key.
7) Continuing to press the TEST to change the screen in all white signal.
8) Minimize the CONT and the BRT.
9) Adjust the BLUE and the RED with using color meter. (minolta CS-100 or the like)
   x : 0.313 ± 0.025
   y : 0.329 ± 0.025
   Must not change the GREEN BIAS by this time.
10) Press the MEMORY key.
11) Press the GAIN key.
12) Continuing to press the TEST key to change the screen in internal signal
13) Press the RESET key so that
   CONT : 80%
   BRT : 50%
14) Adjust the BLUE and the RED with using color meter so that
   x : 0.313 ± 0.015
   y : 0.329 ± 0.015
   Must not adjust the GREEN GAIN.
15) Press the MEMORY key.

7. VID2 WHITE BALANCE ADJUSTMENT (9300° K)

1) Press the PAGE key to select "PAGE 4".
2) Press the arrow key to select "VID2".
3) Press the BIAS (or GAIN) key to set to ADJUSTMENT mode.
4) Press the arrow key ◀ and ▶ simultaneously and confirm that the messages are displaying in the screen like the figure.



5) Press the arrow key ▲. (This operates memorize the shipment data)
6) Press the BIAS key.
7) Continuing to press the TEST key to change the screen in all white signal.
8) Minimize the CONT and the BRT.
9) Adjust the BLUE and the RED with using color meter (minolta CS-100 or the like) so that
   x : 0.284 ± 0.025
   y : 0.297 ± 0.025
   Must not adjust the GREEN BIAS by this time.
10) Press the MEMORY key.
11) Press the GAIN key.
12) Continuing to press the TEST key to change the screen in internal signal
13) Press the RESET key so that
   CONT : 80%
   BRT : 50%
14) Adjust the GREEN and the RED with using color meter so that
   x : 0.284 ± 0.015
   y : 0.297 ± 0.015
   Most not adjust the BLUE GAIN by this time.
15) Press the MEMORY key.

HDIH-1200M
RM-1200

SONY®
SERVICE MANUAL

AEP Model
Chassis No. SCC-D16B-A

+ 7074

CORRECTION-1

File this correction with the service manual.

INTRODUCTION

Part No. of the program ROM (IC2) on the Y board was incorrect.
Please use the correct Part No. as below.

☛ : Indicated corrected portion

Page 306 : **SECTION 9 ELECTRICAL PARTS LIST**

Incorrect				Correct			
REF.NO.	PART NO.	DISCRIPTION	REMARK	REF.NO.	PART NO.	DISCRIPTION	REMARK
IC2	8-759-746-99	IC MBM27C512-25		IC2	8-759-163-64	IC MBM27C512-20-PJY016	

SUPPLEMENT-1
Page 57 : **SECTION 9 ELECTRICAL PARTS LIST**

Incorrect				Correct			
REF.NO.	PART NO.	DISCRIPTION	REMARK	REF.NO.	PART NO.	DISCRIPTION	REMARK
IC2	8-759-092-89	IC MBM27C512P-20-PJY015		IC2	8-759-163-64	IC MBM27C512-20-PJY016	

MICROFILM

9-978-012-91

Sony Corporation
Display Products Group

English
93EL1511-1
Printed in Japan

XXG 236

HDIH-1200M
RM-1200

SONY®
SERVICE MANUAL

AEP Model
Chassis No. SCC-D16B-A

+ 7074

SUPPLEMENT-1

File this Supplement with the Service Manual.

INTRODUCTION

BA, BB and Y, CA (RG) and CA (B) schematic diagrams alteration.

Note)

Before use, confirm that the part numbers listed below match the part number of the board used in the set.

Board	Board Part. No
BA	1-629-822-14
BB	1-629-823-14
Y	1-629-824-15
CA (RG)	1-629-813-13
CA (B)	1-629-814-13

TABLE OF CONTENTS

WARNING !!

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS. THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

SECTION 7
DIAGRAMS

Note :

- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics.

Pitch : 5mm
Rating electrical power : ¼W

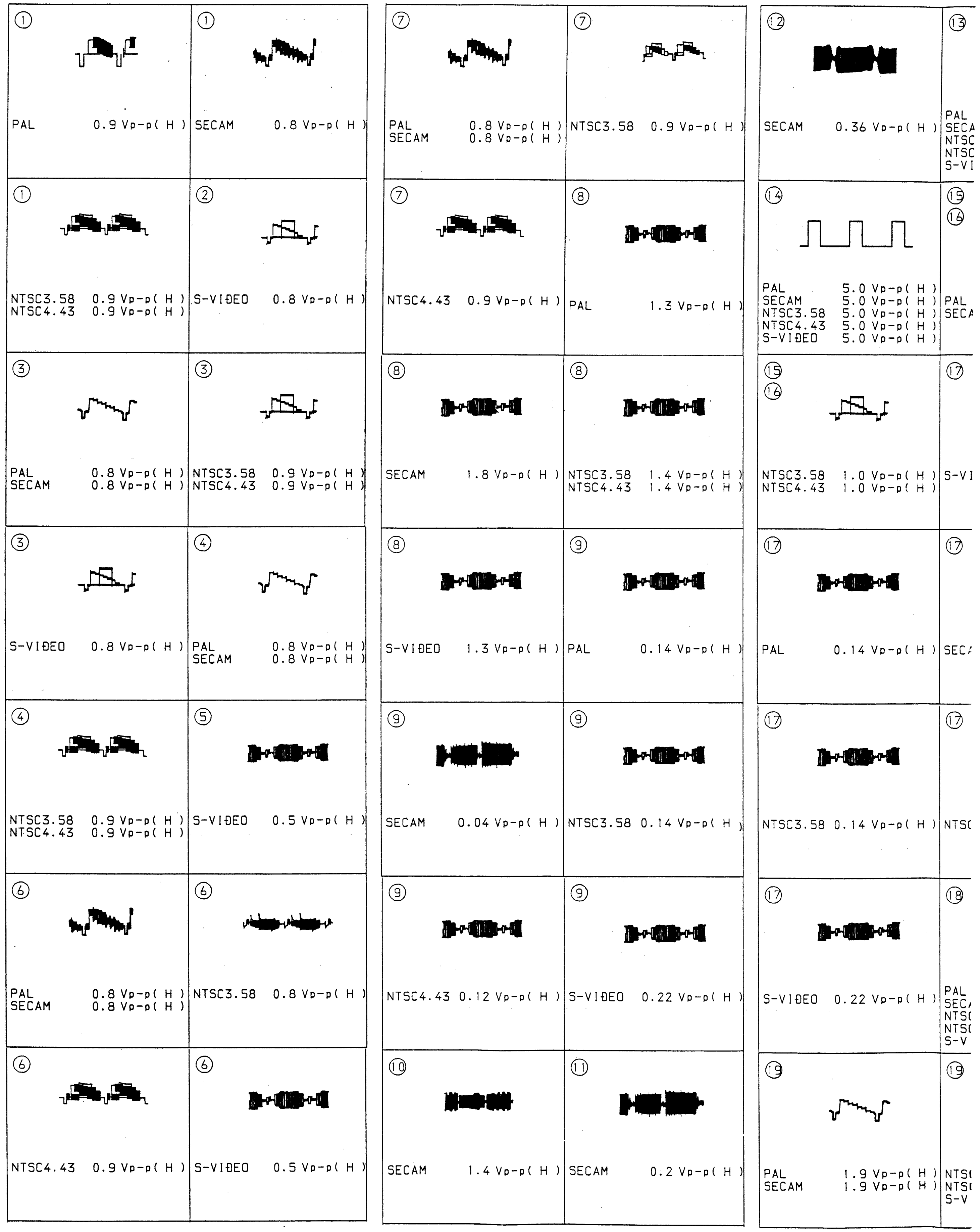
- All resistors are in ohms.
- : nonflammable resistor.
- : fusible resistor.
- △ : internal component.
- ☐ : adjustment for repair.
- ☐ : panel designation.
- Voltage value is the reference value between it & the earth, when NTSC 3.58 color bar signal is received from color bar generator (digital multi- meter used : 10M ohms/V DC).
- ☆ : Displays a list of BB, BA substrate modes. (PAL, SECAM, NTSC 3.58, NTSC 4.43) Displays a list of existing voltages, when substrate E has issued a white pattern of internal signals.
- Unit of voltage values is V (volt).
- For other modes, see the respective circuit diagrams.
- ✕ : Measurement disabled
- V : B + line
- V : B − line (Actual measured value may be different).
- Round numerals indicate Waveform Table No.

Reference information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: RW	NONFLAMMABLE WIREWOUND
	: ※	ADJUSTMENT RESISTOR
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

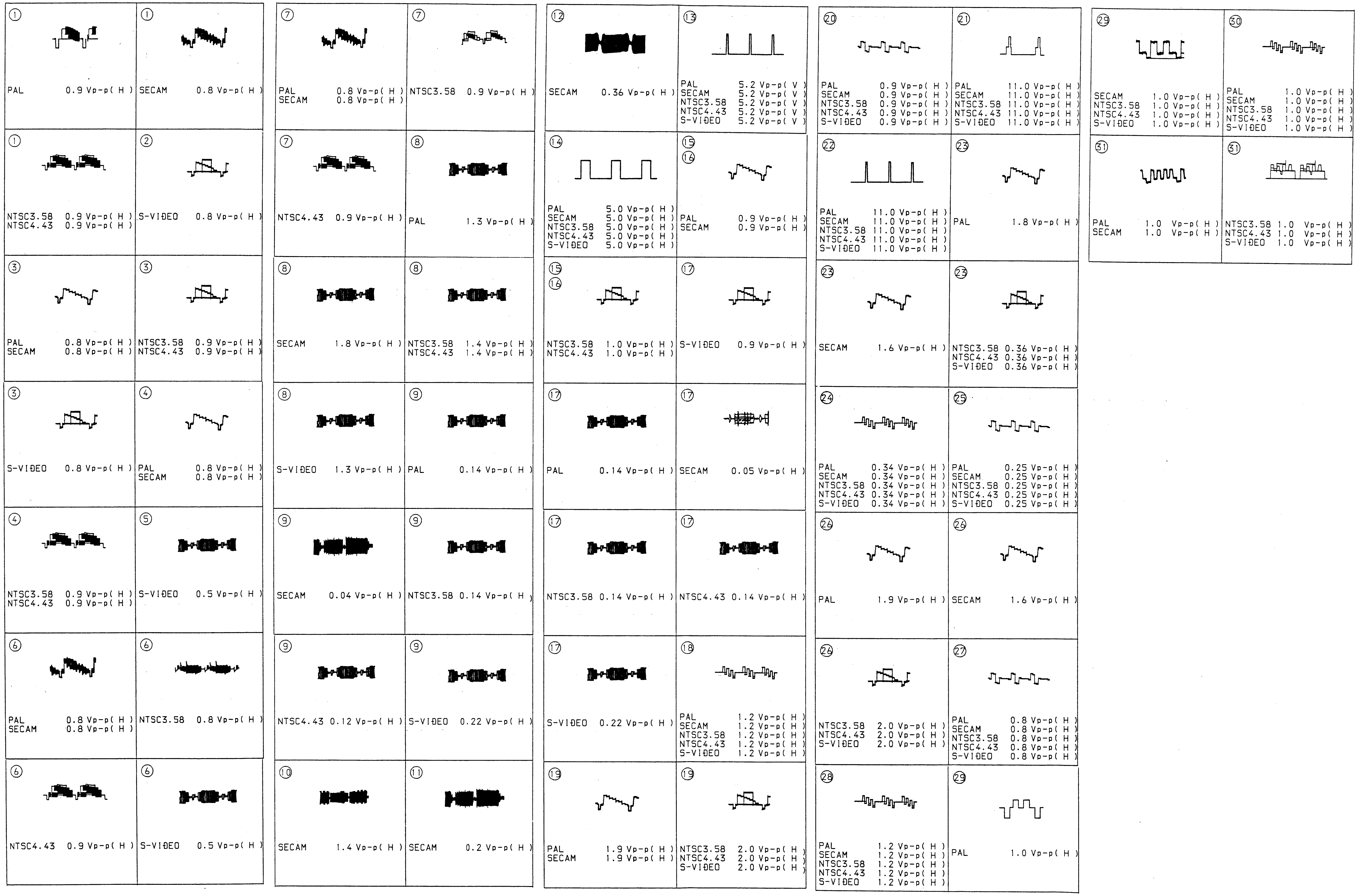
Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

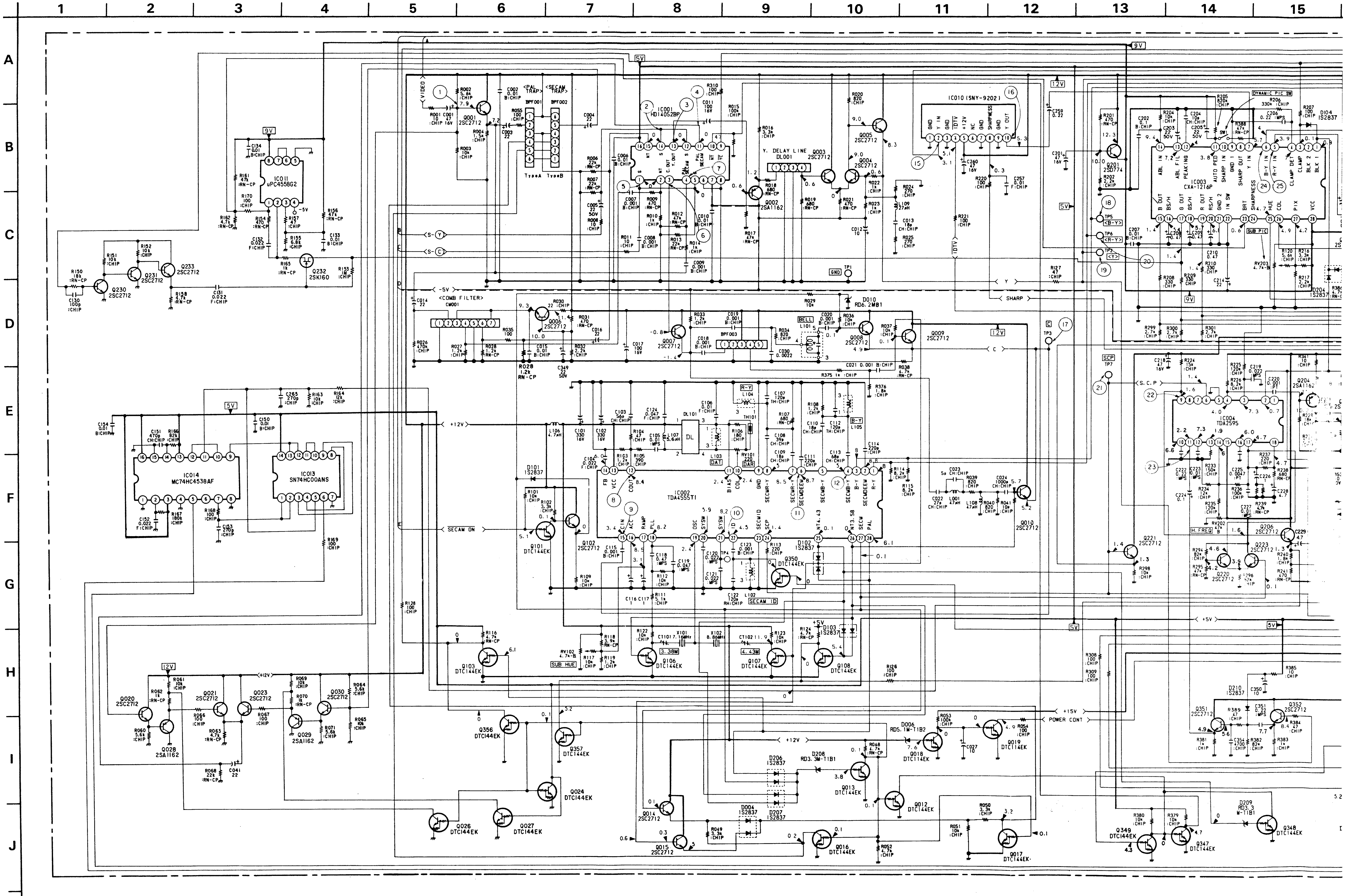
BA BOARD WAVEFORMS

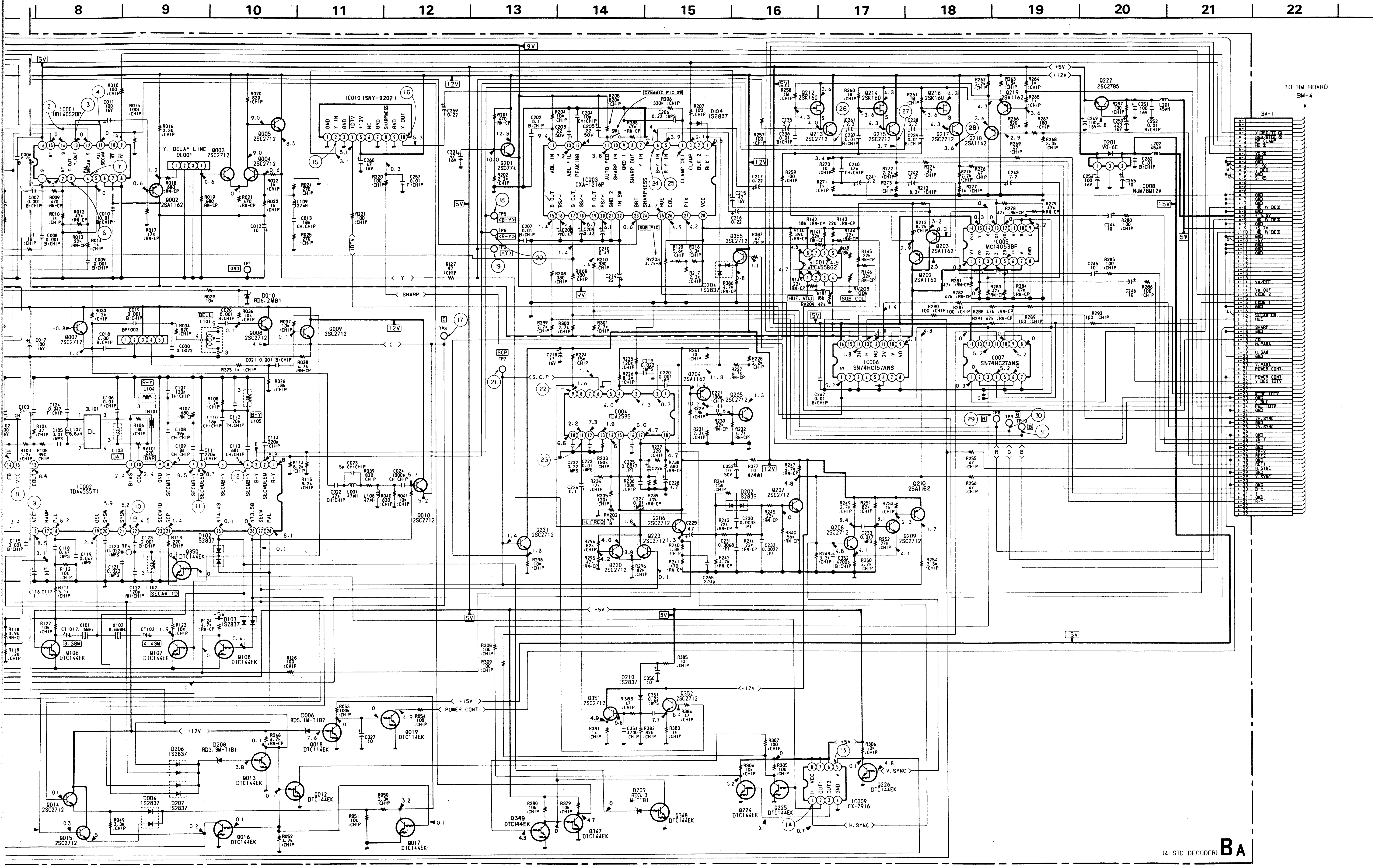


HDIH-1200M
RM-1200

BA BOARD WAVEFORMS




IC001 HD14052BP
IC002 TDA4555T1
IC003 CXA-1216P
IC004 TDA2595
IC010 (SNY-9202)
IC011 uPC4558G2
IC013 SN74HC00ANS
IC014 MC74HC4538AF
Y. DELAY LINE DL001
COMB FILTER
SECAM ON
POWER CONT
SUB HUE
SECAM ID



TO BM BOARD BM-4
IC003 CXA-1216P
IC010 (SNY-9202)
IC002 TDA4555T1
IC004 TDA2595
IC005 MC14053BF
IC006 SN74HC157ANS
IC007 SN74HC27ANS
IC008 NJM78M12A
IC009 CX-7916
IC012 μPC4558G2
IC001 HD14052BP
Y. DELAY LINE DL001
POWER CONT
H. SYNC
V. SYNC
(4-STD DECODER) B A

IC1	HD14052BP	SYSTEM SW
IC2	TDA4558T1	DECORDER
IC3	CXA1216P	MATRIX
IC4	TDA2595	JUNGLE
IC5	MC14053BF	IDTV SW-1
IC6	TC74HC157AP	IDTV SW-2
IC7	SN74HC27ANS	IDTV SW-3
IC8	NJM78M12A	12V REG
IC9	CX-7916	50/60 DET
IC10	SNY-9202	SHARPNESS
IC11	µ PC4558G2	BRT CONT
IC12	µ PC4558C	LEVEL SHIFT
IC13	SN74HC00ANS	GATE
IC14	MC74HC4538AF	PULSE GENERATOR
Q1	2SC2712	VIDEO BUFF
Q2	2SA1162	Y BUFF-1
Q3	2SA2712	Y AMP-1
Q4	2SA2712	Y AMP-2
Q5	2SA2712	Y AMP-3
Q6	2SC2712	9V REG-1
Q7	2SC2712	C BUFF
Q8	2SC2712	SECAM C BUFF
Q9	2SC2712	PAL C BUFF
Q10	2SC2712	NTSC C BUFF
Q12	DTC144EK	W/B SW-1
Q13	DTC144EK	W/B SW-2
Q14	2SC2712	NT3.58 SW
Q15	2SC2712	NT4.43 SW
Q16	DTC144EK	TRAP SW-1
Q17	DTC144EK	TRAP SW-2
Q18	DTC114EK	POW CONT-1
Q19	DTC114EK	POW CONT-2
Q20	2SC2712	VIDEO BUFF
Q21	2SC2712	Y SW
Q23	2SC2712	Y SW
Q29	2SA1162	VIDEO BUFF
Q30	2SC2712	VIDEO BUFF
Q101	DTC144EK	SECAM SW-1
Q102	2SC2712	SECAM SW-2
Q103	DTC144EK	MODE SW-1
Q104	DTC144EK	MODE SW-2
Q106	DTC144EK	NT OSC SW
Q107	DTC144EK	PAL OSC SW
Q108	DTC144EK	MODE SW-3
Q109	DTC144EK	MODE SW-4
Q201	2SD774	9V REG-2
Q202	2SA1162	B-Y BUFF-1
Q203	2SA1162	R-Y BUFF-1
Q204	2SA1162	AFC-1
Q205	2SC2712	AFC-2
Q206	2SC2712	SYNC BUFF
Q207	2SC2712	V. SYNC SW-1
Q208	2SC2712	V. SYNC SW-2
Q209	2SC2712	V. SYNC SW-3
Q210	2SA1162	V. SYNC SW-4
Q211	2SC2712	H. SYNC SW
Q212	2SK160	Y. CLAMP-1
Q213	2SC2712	Y. BUFF-2
Q214	2SK160	B-Y CLAMP
Q215	2SC2712	R-Y BUFF-2
Q216	2SK160	B-Y CLAMP
Q217	2SC2712	B-Y BUFF-2
Q218	2SA1162	CLAMP
Q219	2SA1162	REF DC BUFF-1
Q220	2SC2712	REF DC BUFF-2
Q221	2SC2712	SCP BUFF
Q222	2SD774	+ 5V REG
Q223	2SC2712	BGP SHIFT
Q224	DTC144EK	50/60 SW-1
Q225	DTC144EK	50/60 SW-2
Q226	DTC144EK	V. SYNC SW-5
Q230	2SC2712	CLAMP BUFF
Q231	2SC2712	CLAMP BUFF
Q232	2SK160	BRT CONT
Q233	2SC2712	CLAMP BUFF
Q347	DTC144EK	SYSTEM SW-1
Q348	DTC144EK	NT4.43 SW
Q349	DTC144EK	SYSTEM SW-2
Q350	DTC144EK	ID
Q351	2SC2712	Y BUFF-3
Q352	2SC2712	Y CLAMP-2
Q355	2SC2712	BLK BUFF
Q356	DTC144EK	MODE SW-5
Q357	DTC144EK	MODE SW-6
D4	1S2837	NT3.58 DET
D6	RD5.1MB2	POW CONT
D101	1S2837	SECAM SW
D102	1S2837	MODE SW-1
D103	1S2837	MODE SW-2
D201	V06C	+ 12V PROT
D202	1S2835	SYNC SEP
D203	1S2835	H. SYNC SW
D204	1S2837	BLK ADD
D206	1S2837	W/B SW-2
D207	1S2837	W/B SW-3
D208	RD3.3MB1	W/B SW-1.
D209	RD3.3MB1	NT4.43 SW
D210	1S2837	Y. CLAMP

BA BOARD

IC-No.	PIN-No.	PAL	SECAM	NTSC 3.58	NTSC 4.43	S-VIDEO
001	①	0	0	0	0	− 0.3
	③	− 0.7	− 0.7	0	− 0.7	− 0.3
	④	− 0.7	− 0.7	0	− 0.7	0
	⑨	5.1	5.1	5.1	5.1	0
	⑩	4.7	4.7	0	4.7	0
002	⑤	8.6	4.3	7.2	8.1	6.2
	⑦	8.5	4.4	7	7.9	5.9
	⑳	5.9	5.9	7.7	7.7	7.7
	㉑	8.2	7.5	5.9	5.9	5.9
	㉕	0.1	0.1	0	6.1	0
	㉖	0	0	6.1	0	6.1
	㉗	0.1	6.1	0	0	0
	㉘	6.1	0.1	0	0	0
004	⑩	6.6	6.3	6.5	6.6	6.6
	⑬	1.9	2	1.8	2.2	1.8
006	⑪	1.4	0.3	0.9	0.9	0.7
	⑭	1.3	0.2	0.9	0.9	0.6
007	①	0.3	2.9	0.3	0.3	0.3
	③	0	0	5.1	5.2	5.2
	⑪	0	4.3	0	0	0
009	②	5.1	0	5.1	5.1	5.1
	③	0	5.2	0	0	0
010	⑧	0.3	0.3	0.3	0.3	3.4

Q-No.		PAL	SECAM	NTSC 3.58	NTSC 4.43	S-VIDEO
007	B	− 0.7	− 0.7	0	− 0.7	− 0.3
	C	−	−	−	−	−
	E	− 0.7	− 1.3	− 0.7	− 1.3	− 1
008	B	0	*	0	0	0
	C	−	−	−	−	−
	E	5	5	5.4	5	5.4
009	B	*	0	0	*	0
	C	−	−	−	−	−
	E	5	5	5.4	5	5.4
010	B	0	0	*	0	8
	C	−	−	−	−	−
	E	4.9	5	5.4	4.9	5.4
012	B	−	−	−	−	−
	C	0	0	4.3	0	4.3
	E	−	−	−	−	−
014	B	0.1	6.1	0.2	0.3	0
	C	−	−	−	−	−
	E	0.3	5.5	0	0.4	0
015	B	0.6	0.1	0.2	5.6	0
	C	−	−	−	−	−
	E	5	1.9	0	5	0
016	B	−	−	−	−	−
	C	0.2	4.1	0.1	0.3	0
	E	−	−	−	−	−
017	B	−	−	−	−	−
	C	3.2	3.6	0	3.2	0
	E	−	−	−	−	−
103	B	6.1	0	0.3	0.2	0
	C	−	−	−	−	−
	E	−	−	−	−	−
104	B	0	0	6.1	0.1	6.1
	C	5.2	5.2	0	5.2	0
	E	−	−	−	−	−
106	B	0	0	6.1	0.1	6.1
	C	12.4	12.4	0	12.4	0
	E	−	−	−	−	−
107	B	5.6	0.1	0.2	5.6	0
	C	0	12.4	12.4	0	12.4
	E	−	−	−	−	−
108	B	0.7	0.5	5.6	5.6	5.6
	C	5.2	5.2	0	0	0
	E	−	−	−	−	−
207	B	− 0.1	0	− 0.2	0	0
	C	−	−	−	−	−
	E	−	−	−	−	−
220	B	4.3	4.3	4.1	4.3	4.4
	C	4.6	4.7	4.4	4.4	4.4
	E	3.9	5.6	4.2	3.8	3.8
223	B	0	6.1	0.2	0	0
	C	−	−	−	−	−
	E	3.9	5.6	4.2	3.8	3.8
224	B	5.1	5.2	0	0	0
	C	5.2	0	5.1	5.2	5.2
	E	−	−	−	−	−
225	B	0	0	5.1	5.1	5.1
	C	0	4.3	0	0	0
	E	−	−	−	−	−
347	B	0	0	4.3	0	0
	C	4.7	4.7	0	4.7	0
	E	−	−	−	−	−
348	B	0	0	0	4.2	0
	C	0	0	4.3	0	0
	E	−	−	−	−	−
349	B	4.3	4.3	0	0	0
	C	0	0	4.3	0	0
	E	−	−	−	−	−
350	B	0	0	5.1	5.1	5.1
	C	−	−	−	−	−
	E	−	−	−	−	−
355	B	1.1	1.2	1	1.2	1.2
	C	−	−	−	−	−
	E	−	−	−	−	−
357	B	−	−	−	−	−
	C	5.2	5.2	0	0	0
	E	−	−	−	−	−

IC	
IC001	E − 10
IC002	B − 10
IC003	C − 4
IC004	B − 7
IC005	C − 1
IC006	B − 1
IC007	A − 1
IC008	D − 7
IC009	B − 3
IC010	C − 6
IC011	C − 5
IC012	E − 3
IC013	B − 2
IC014	C − 2

TRANSISTOR	
Q201	B − 5
Q202	B − 3
Q222	B − 6

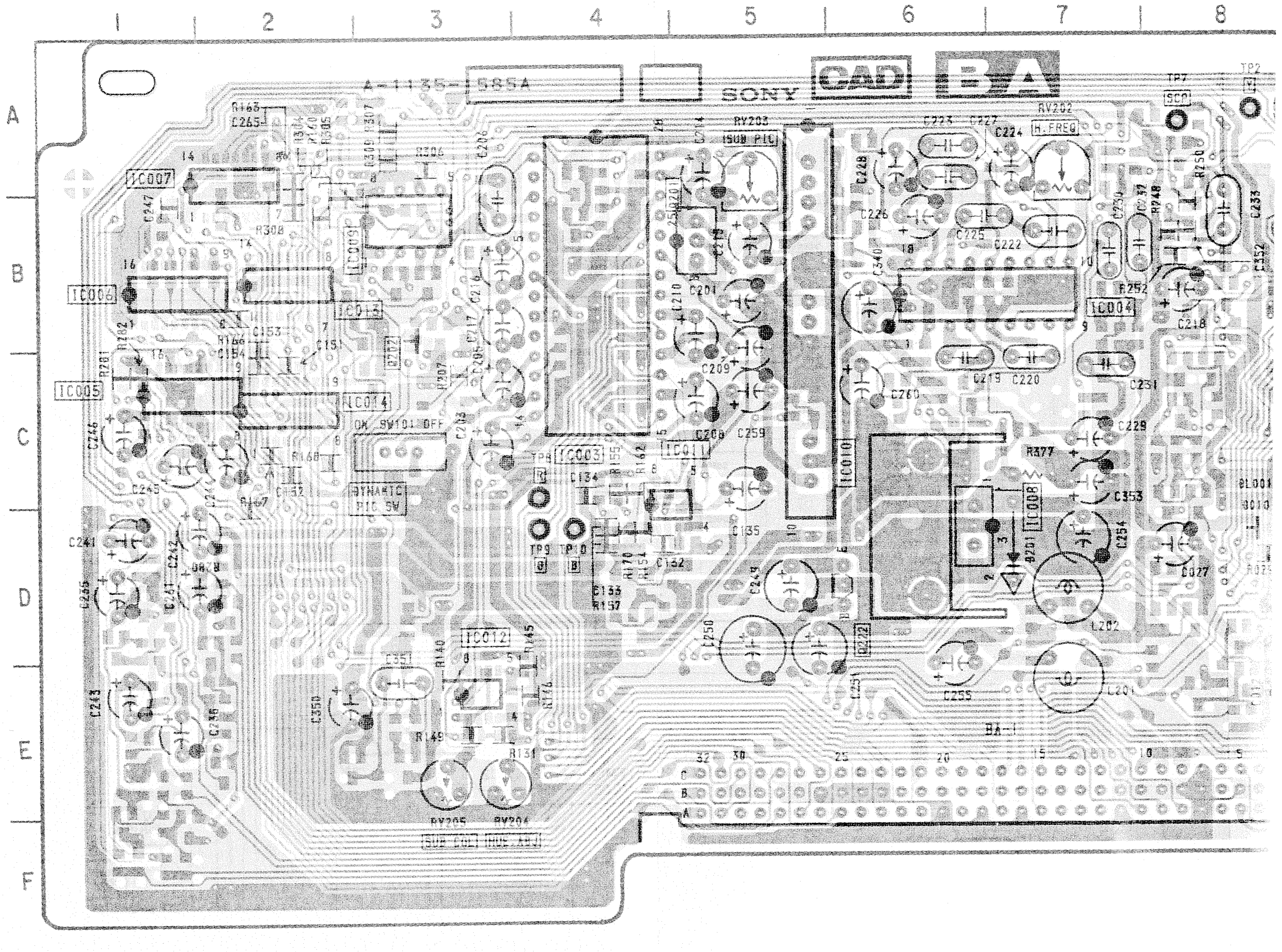
DIODE	
D010	D − 8
D201	D − 7

VARIABLE RESISTOR	
RV101	C − 10
RV102	A − 12
RV202	A − 7
RV203	A − 5
RV204	E − 3
RV205	E − 3

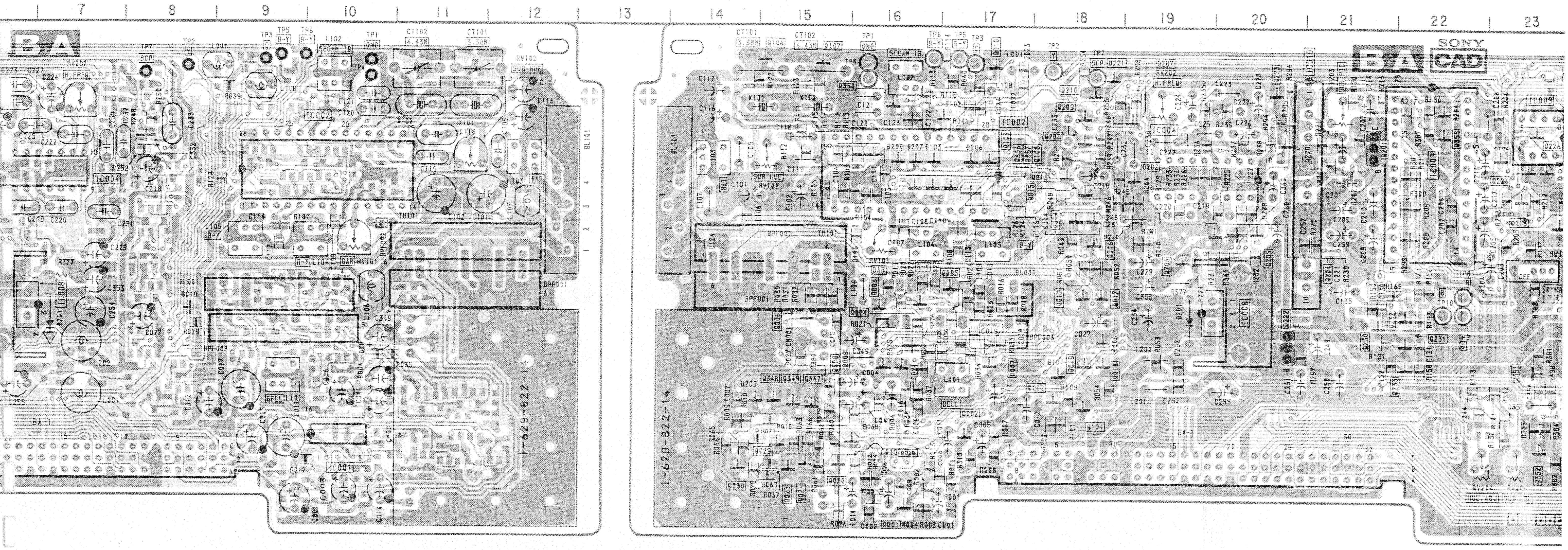
TP	
TP1	A − 10
TP2	A − 8
TP3	A − 9
TP4	A − 10
TP5	A − 9
TP6	A − 9
TP7	A − 8
TP8	C − 4
TP9	D − 4
TP10	D − 4

BA [4-STD DECODER]

– BA BOARD – (COMPOMENT SIDE)



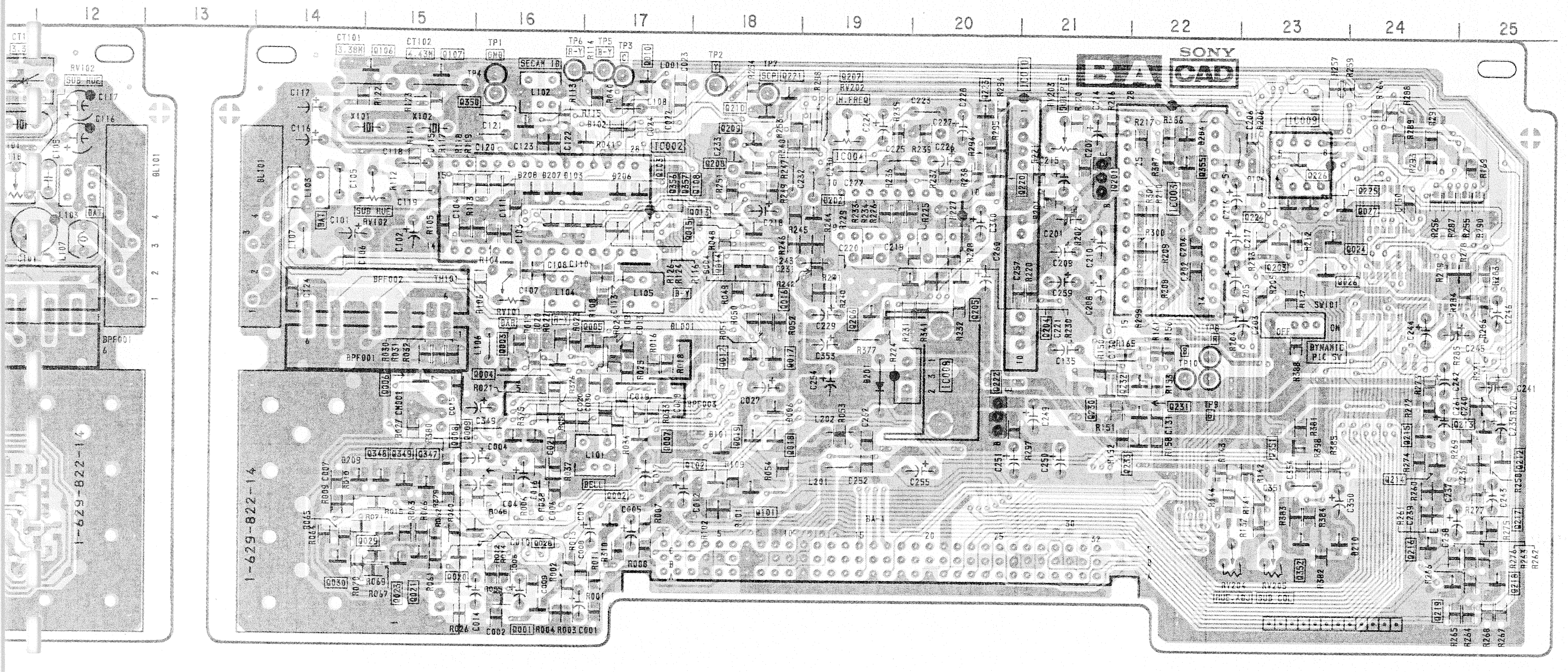
(CONDUCTOR SIDE)



Note :

- : Pattern from
- : Pattern of th

(CONDUCTOR SIDE)



Note :

- : Pattern from the side which enables seeing.
- : Pattern of the rear side.

IC

Ref.	Location
IC002	B – 17
IC003	B – 22
IC008	D – 20
IC009	B – 23
IC010	A – 20

TRANSISTOR

Ref.	Location
Q001	F – 16
Q002	E – 17
Q003	C – 16
Q004	D – 16
Q005	C – 17
Q006	D – 15
Q007	D – 17
Q008	D – 16
Q009	D – 16
Q010	A – 17
Q012	C – 18
Q013	B – 18
Q014	C – 18
Q015	B – 18
Q016	C – 18
Q017	C – 18
Q018	D – 18
Q019	D – 18
Q020	E – 15
Q021	F – 15
Q023	F – 15
Q024	D – 24
Q026	C – 23
Q027	B – 24
Q028	E – 16
Q029	E – 15
Q030	F – 14
Q101	E – 18
Q102	D – 17
Q103	B – 17
Q106	A – 15
Q107	A – 15
Q108	B – 18
Q201	B – 21
Q203	C – 23
Q204	C – 21
Q205	C – 20
Q206	C – 19
Q207	A – 19
Q208	B – 18
Q209	A – 18
Q210	A – 18
Q212	D – 25
Q213	D – 25
Q214	D – 24
Q215	D – 24
Q216	E – 24
Q217	E – 25
Q218	E – 25
Q219	F – 24
Q220	B – 20
Q221	A – 18
Q222	D – 20
Q223	A – 20
Q224	B – 23
Q225	B – 24
Q226	B – 23
Q230	D – 21
Q231	D – 22
Q232	D – 21
Q233	D – 22
Q347	E – 15
Q348	E – 15
Q349	E – 15
Q350	A – 16
Q351	D – 23
Q352	E – 23
Q355	B – 22
Q356	B – 17
Q357	B – 17

DIODE

Ref.	Location
D004	C – 18
D006	D – 18
D101	D – 18
D102	A – 17
D103	B – 16
D104	B – 23
D201	D – 19
D202	B – 19
D204	A – 22
D206	B – 17
D207	B – 16
D208	B – 16
D209	D – 14
D210	E – 24

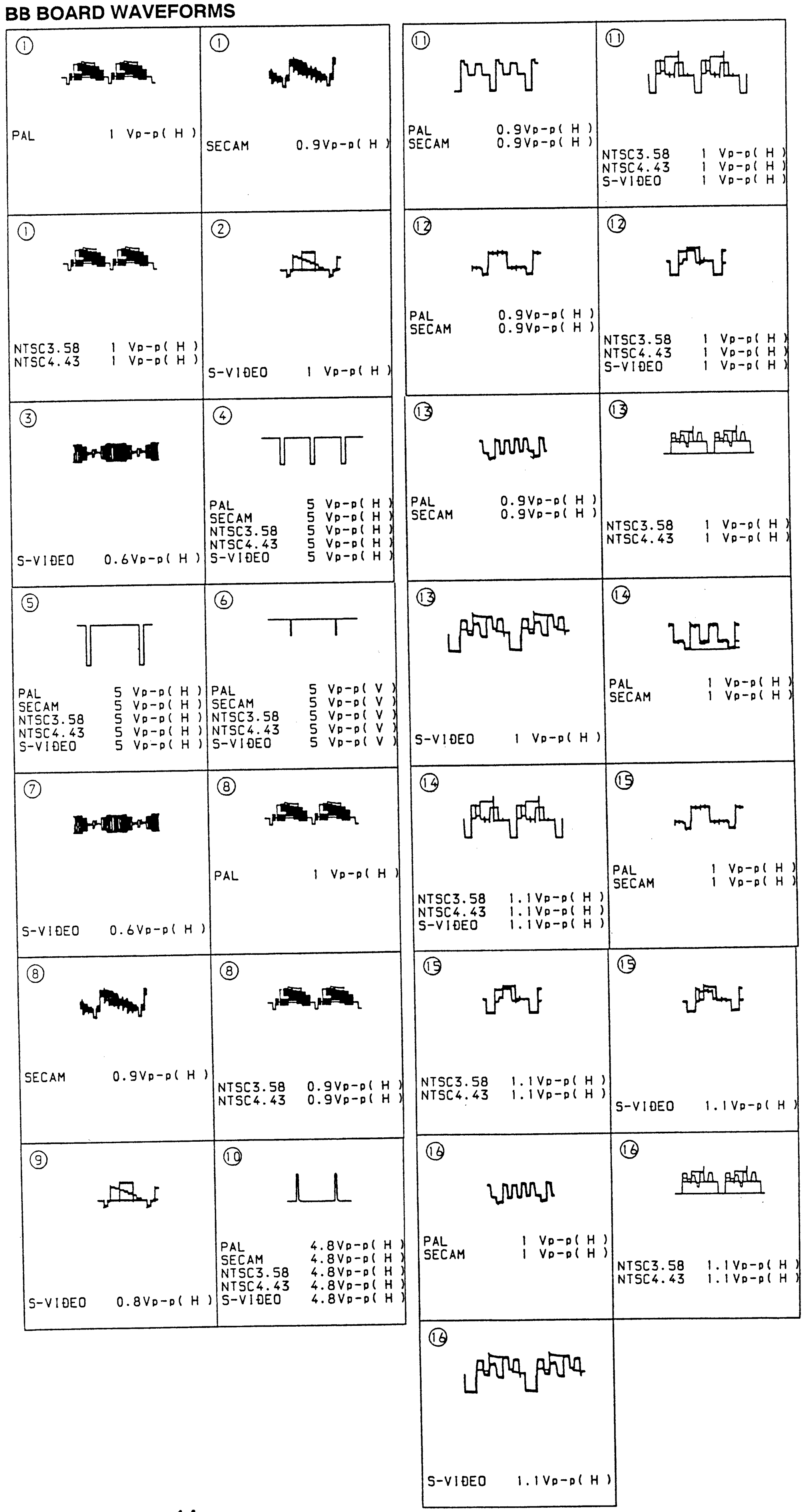
VARIABLE RESISTOR

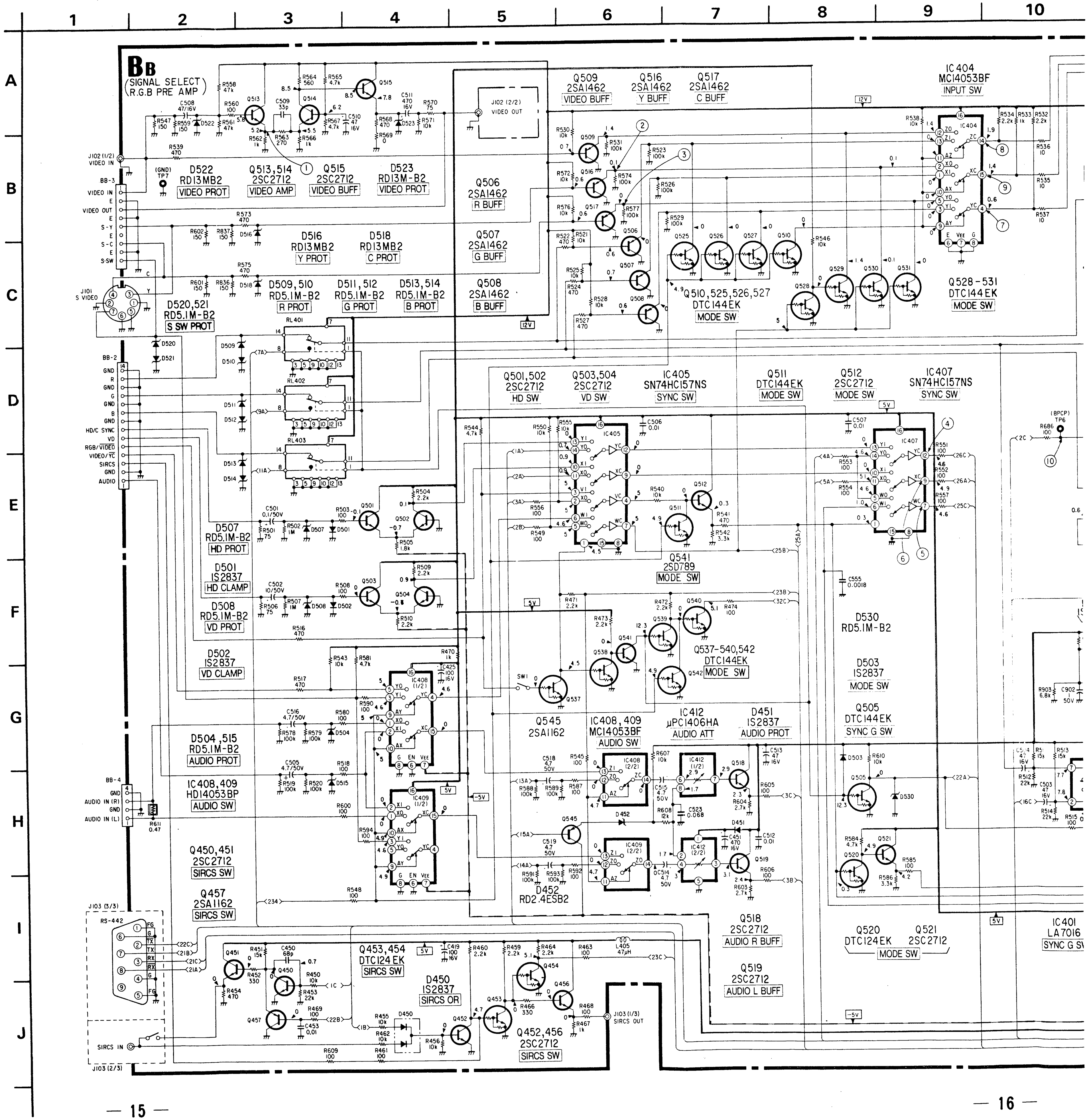
Ref.	Location
RV101	C – 16
RV102	B – 15
RV202	A – 19
RV203	A – 21
RV204	E – 22
RV205	E – 23

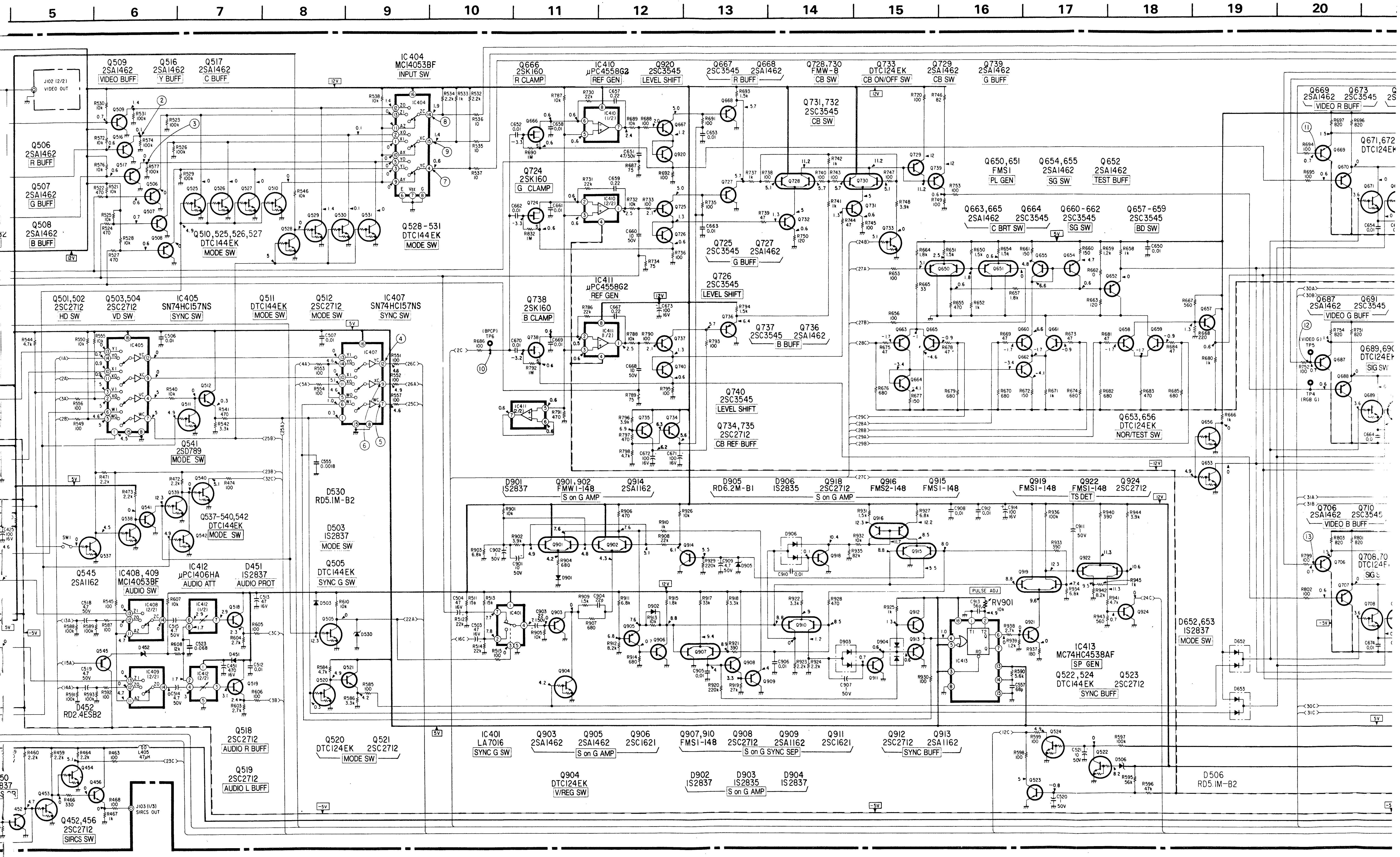
TP

Ref.	Location
TP1	A – 16
TP2	A – 18
TP3	A – 17
TP4	A – 16
TP5	A – 17
TP6	A – 16
TP7	A – 18
TP8	C – 22
TP9	D – 22
TP10	D – 22

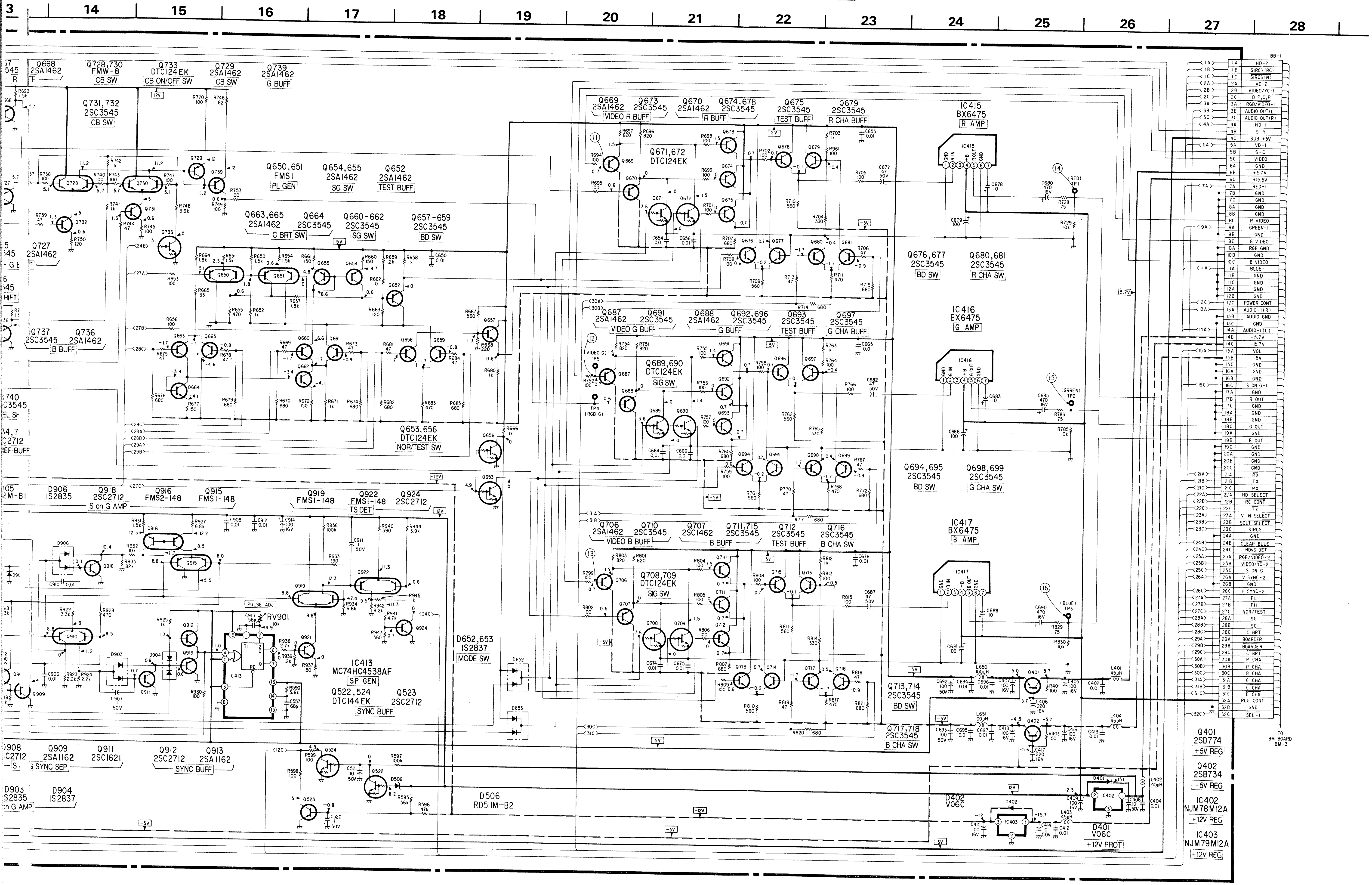
BB BOARD WAVEFORMS







Q509 2SA1462 VIDEO BUFF
Q516 2SA1462 Y BUFF
Q517 2SA1462 C BUFF
IC404 MC14053BF INPUT SW
Q666 2SK160 R CLAMP
IC410 μPC4558G2 REF GEN
Q920 2SC3545 LEVEL SHIFT
Q667 2SC3545
Q668 2SA1462
R BUFF
Q728,730 FMW-8 CB SW
Q733 DTC124EK CB ON/OFF SW
Q729 2SA1462 CB SW
Q739 2SA1462 G BUFF
Q669 2SA1462
Q673 2SC3545
VIDEO R BUFF
J102 (2/2) VIDEO OUT
Q506 2SA1462 R BUFF
Q507 2SA1462 G BUFF
Q508 2SA1462 B BUFF
Q510,525,526,527 DTC144EK MODE SW
Q528-531 DTC144EK MODE SW
Q724 2SK160 G CLAMP
Q731,732 2SC3545 CB SW
Q725 2SC3545
Q727 2SA1462
G BUFF
Q650,651 FMS1 PL GEN
Q654,655 2SA1462 SG SW
Q652 2SA1462 TEST BUFF
Q663,665 2SA1462
Q664 2SC3545
C BRT SW
Q660-662 2SC3545 SG SW
Q657-659 2SC3545 BD SW
Q671,672 DTC124EK
Q726 2SC3545 LEVEL SHIFT
IC411 μPC4558G2 REF GEN
Q501,502 2SC2712 HD SW
Q503,504 2SC2712 VD SW
IC405 SN74HC157NS SYNC SW
Q511 DTC144EK MODE SW
Q512 2SC2712 MODE SW
IC407 SN74HC157NS SYNC SW
Q738 2SK160 B CLAMP
Q737 2SC3545
Q736 2SA1462
B BUFF
Q687 2SA1462
Q691 2SC3545
VIDEO G BUFF
Q689,690 DTC124EK SIG SW
Q740 2SC3545 LEVEL SHIFT
Q734,735 2SC2712 CB REF BUFF
Q653,656 DTC124EK NOR/TEST SW
Q541 2SD789 MODE SW
Q537-540,542 DTC144EK MODE SW
D530 RD5.1M-B2
D503 1S2837 MODE SW
Q505 DTC144EK SYNC G SW
D901 1S2837
Q901,902 FMW1-148
Q914 2SA1162
S on G AMP
D905 RD6.2M-B1
D906 1S2835
Q918 2SC2712 S on G AMP
Q916 FMS2-148
Q915 FMS1-148
Q919 FMS1-148
Q922 FMS1-148
TS DET
Q924 2SC2712
Q706 2SA1462
Q710 2SC3545
VIDEO B BUFF
Q706,707 DTC124EK SIG SW
Q545 2SA1162
IC408,409 MC14053BF AUDIO SW
IC412 μPC1406HA AUDIO ATT
D451 1S2837 AUDIO PROT
D452 RD2.4ESB2
PULSE ADJ RV901
IC413 MC74HC4538AF SP GEN
Q522,524 DTC144EK
Q523 2SC2712
SYNC BUFF
D652,653 1S2837 MODE SW
Q518 2SC2712 AUDIO R BUFF
Q519 2SC2712 AUDIO L BUFF
Q520 DTC124EK
Q521 2SC2712
MODE SW
IC401 LA7016 SYNC G SW
Q903 2SA1462
Q905 2SA1462
Q906 2SC1621
S on G AMP
Q904 DTC124EK V/REG SW
Q907,910 FMS1-148
Q908 2SC2712
Q909 2SA1162
Q911 2SC1621
S on G SYNC SEP
D902 1S2837
D903 1S2835
D904 1S2837
S on G AMP
Q912 2SC2712
Q913 2SA1162
SYNC BUFF
D506 RD5.1M-B2
Q452,456 2SC2712 SIRCS SW
J103 (1/3) SIRCS OUT



BB [SIGNAL SELECT / R.G.B. PRE AMP]

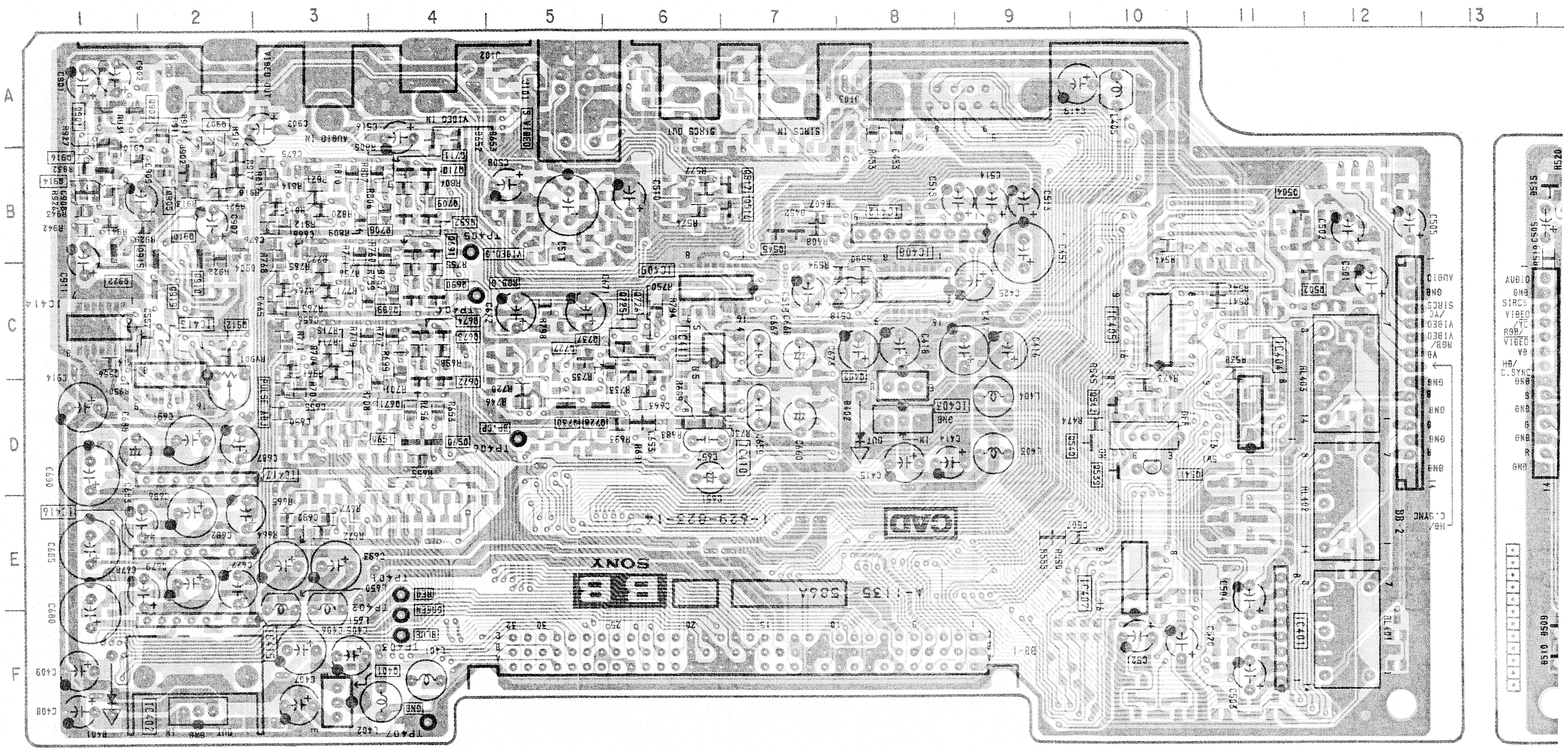
– BB BOARD – (COMPOMENT SIDE) (CONDUCT

IC	
IC401	F-11
IC403	D-8
IC404	C-11
IC405	C-10
IC407	E-10
IC408	B-8
IC409	C-6
IC410	D-7
IC411	C-6
IC412	B-8
IC413	C-2
IC414	C-1

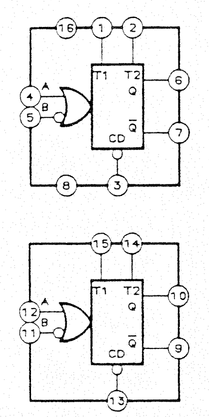
TRANSISTOR	
Q401	F-3
Q402	C-8
Q504	B-11
Q513	B-2
Q516	B-7
Q517	B-7
Q539	D-10
Q540	D-10
Q541	D-10
Q542	D-10
Q545	B-7
Q650	D-4
Q651	D-4
Q671	D-4
Q672	C-4
Q673	C-4
Q674	C-4
Q689	C-4
Q690	C-4
Q691	B-4
Q692	B-4
Q708	B-4
Q709	B-4
Q710	B-4
Q711	B-4
Q725	C-6
Q726	C-6
Q727	C-5
Q728	D-5
Q730	D-5
Q737	C-6
Q901	A-1
Q902	A-2
Q905	B-2
Q907	B-2
Q910	B-2
Q912	C-2
Q914	B-1
Q915	B-2
Q916	B-2
Q919	C-2
Q922	B-1

DIODE	
D401	F-1
D402	D-8
D652	A-4
D653	A-4
D902	B-2
D904	C-2

VARIABLE RESISTOR	
RV901	C-2



BB BOARD IC413 μ PC74HC4538N



BB BOARD

IC-No.	PIN-No.	PAL	SECAM	NTSC 3.58	NTSC 4.43	S-VIDEO
404	②	0.1	0.1	0.1	0.1	1.7
	④	0.1	0.8	0.8	0.8	2.8
	⑤	0	0	0	0	1.4
	⑫	1.4	1.6	1.4	1.4	0
	⑭	2.2	2.2	2.2	2.2	0.8
	⑮	1.6	1.6	1.6	1.6	3
405	⑥	4.6	4.6	4.6	4.6	0
	⑦	5	5	5	5	0
	⑬	0.1	0.1	0.1	0.1	0.6
407	⑤	4.6	4.9	4.8	4.8	4.8
408	③	4.6	4.6	4.6	4.6	0
	④	4.6	4.6	4.6	4.6	0
409	③	4.6	4.6	4.6	4.6	0

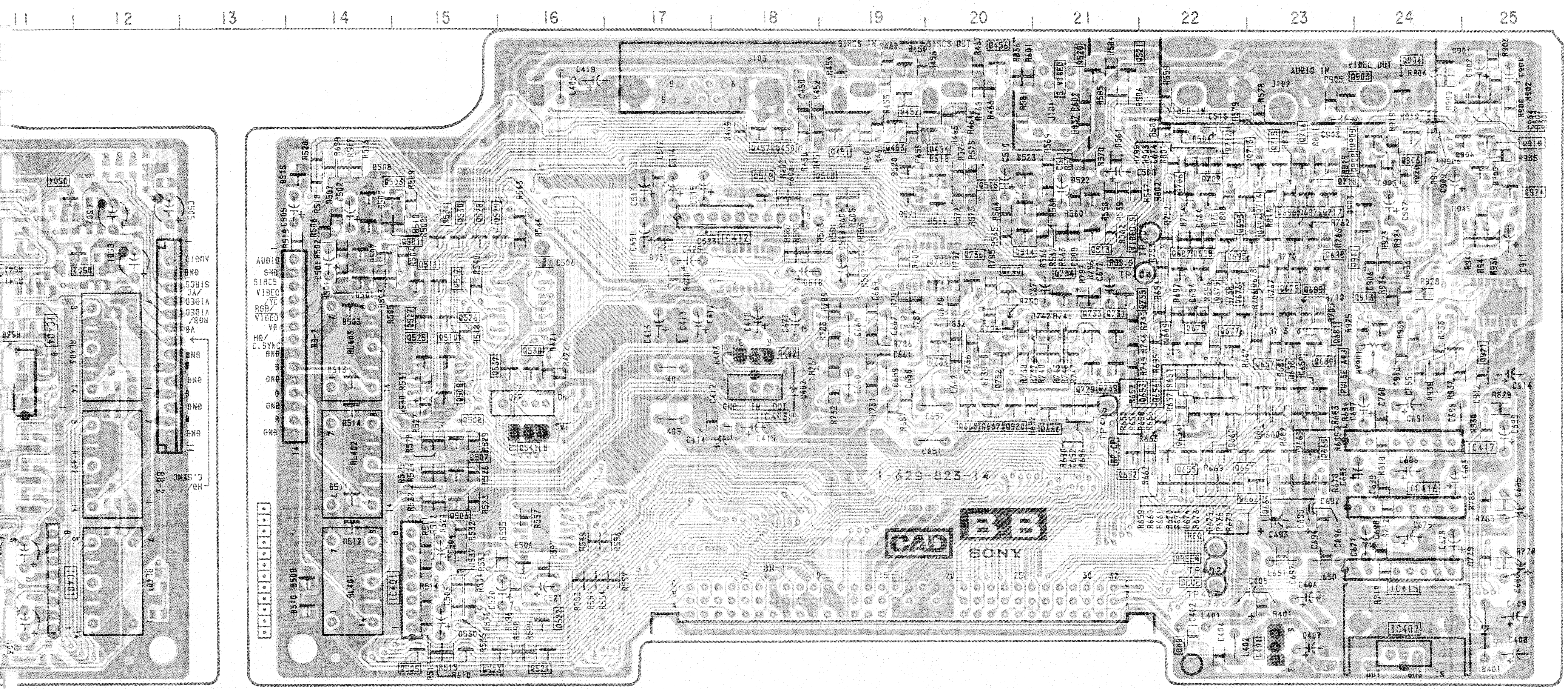
Q-No.		PAL	SECAM	NTSC 3.58	NTSC 4.43	S-VIDEO
509	B	–	–	–	–	–
	C	–	–	–	–	–
	E	1.4	1.6	1.4	1.4	0
516	B	–	–	–	–	–
	C	–	–	–	–	–
	E	0.1	0.1	0.1	0.1	1.7
517	B	–	–	–	–	–
	C	–	–	–	–	–
	E	0	0	0	0	1.4
528	B	5	5	5	5	0
	C	0	0	0	0	4.1
	E	–	–	–	–	–
529	B	–	–	–	–	–
	C	1.4	1.6	1.4	1.4	0
	E	–	–	–	–	–

Q-No.		PAL	SECAM	NTSC 3.58	NTSC 4.43	S-VIDEO
530	B	–	–	–	–	–
	C	0.1	0.1	0.1	0.1	1.7
	E	–	–	–	–	–
531	B	–	–	–	–	–
	C	0	0	0	0	1.4
	E	–	–	–	–	–
650	1	–	–	–	–	–
	2	–	–	–	–	–
	3	5.1	5.1	5.1	5.1	1.8
	4	–	–	–	–	–
	5	1.8	1.8	1.8	1.8	5.1
		–	–	–	–	–
651	1	–	–	–	–	–
	2	–	–	–	–	–
	3	0.8	1.8	1.8	1.8	0
	4	–	–	–	–	–
	5	0	0	0	0	1.8
		–	–	–	–	–

Q-No.		PAL	SECAM	NTSC 3.58	NTSC 4.43	S-VIDEO
654	B	4.4	6.3	6.2	4.3	4.9
	C	–	–	–	–	–
	E	–	–	–	–	–
655	B	4.4	6.3	6.2	4.3	4.9
	C	4.4	6.3	6.2	4.3	4.9
	E	–	–	–	–	–
660	B	–	–	–	–	–
	C	4.5	6.3	6.2	4.3	5.9
	E	–	–	–	–	–
739	B	–	–	–	–	–
	C	0.6	0.6	0.6	0.6	12
	E	12	12	12	12	0.6
740	B	–	–	–	–	–
	C	–	–	–	–	–
	E	6.4	0.6	6.4	0.6	0.6

BB [SIGNAL SELECT / R.G.B. PRE AMP]

(CONDUCTOR SIDE)



Note :
- : Pattern from the side which enables seeing.
- : Pattern of the rear side.

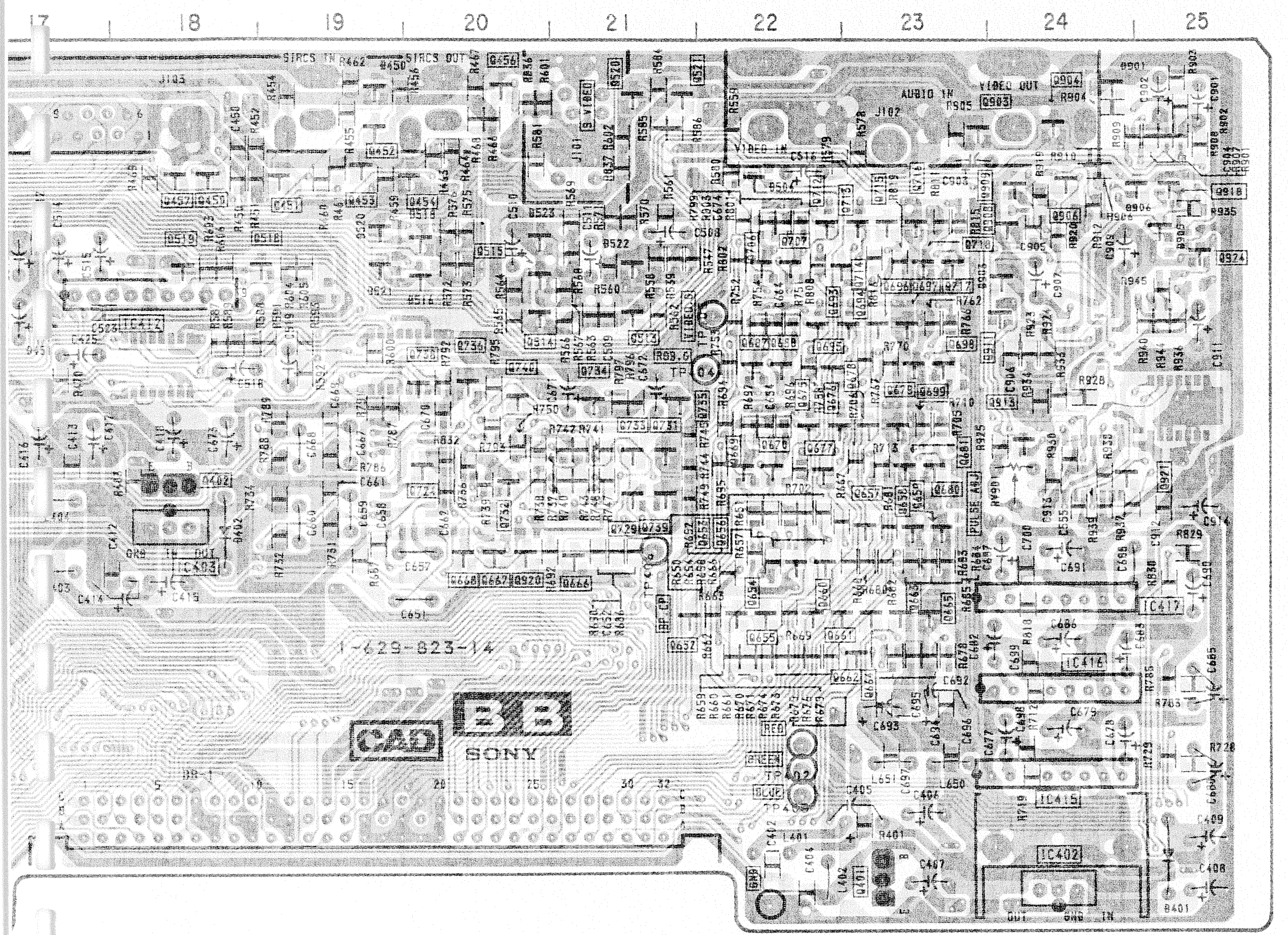
IC

IC	
IC402	F – 24
IC403	D – 18
IC412	B – 18
IC415	F – 24
IC416	E – 24
IC417	D – 25

TRANSISTOR

TRANSISTOR	
Q401	F – 23
Q402	D – 18
Q450	B – 18
Q451	B – 19
Q452	A – 19
Q453	B – 19
Q454	B – 20
Q456	A – 20
Q457	B – 18
Q501	B – 15
Q502	C – 11
Q503	B – 14
Q505	F – 15
Q506	E – 15
Q507	E – 15
Q508	D – 15
Q509	D – 15
Q510	C – 15
Q511	C – 15
Q512	C – 15
Q514	C – 20
Q515	B – 20
Q518	B – 19
Q519	B – 18
Q520	A – 21
Q521	A – 21
Q522	F – 16
Q523	F – 15
Q524	F – 16
Q525	C – 15
Q526	C – 15
Q527	C – 15
Q528	B – 15
Q529	B – 15
Q530	B – 15
Q531	B – 15
Q537	D – 15
Q538	D – 16
Q541	D – 16
Q652	E – 21
Q653	D – 21
Q654	D – 22
Q655	E – 22
Q656	D – 22
Q657	D – 23
Q658	D – 23
Q659	D – 23
Q660	D – 22
Q661	E – 22
Q662	E – 22
Q663	D – 23
Q664	E – 23
Q665	D – 23
Q666	D – 21
Q667	D – 20
Q668	D – 20
Q669	C – 22
Q670	C – 22
Q675	C – 22
Q676	C – 22
Q677	C – 22
Q678	C – 23
Q679	C – 23
Q680	D – 23
Q681	C – 23
Q687	C – 22
Q688	C – 22
Q693	B – 22
Q694	B – 23
Q695	C – 22
Q696	B – 23
Q697	B – 23
Q698	C – 23
Q699	C – 23
Q706	B – 22
Q707	B – 22
Q712	B – 22
Q713	B – 23
Q714	B – 23
Q715	B – 23
Q716	A – 23
Q717	B – 23
Q718	B – 23
Q724	D – 20
Q729	D – 21
Q731	C – 21
Q732	D – 20
Q733	C – 21
Q734	C – 21
Q735	C – 21
Q736	C – 20
Q738	C – 20
Q739	D – 21
Q740	C – 20
Q903	A – 24
Q904	A – 24
Q906	B – 24
Q908	B – 24
Q909	B – 24
Q911	C – 23
Q913	C – 24
Q918	B – 25
Q920	D – 20
Q921	D – 25
Q924	B – 25

BB [SIGNAL SELECT / R.G.B. PRE AMP]



Note :

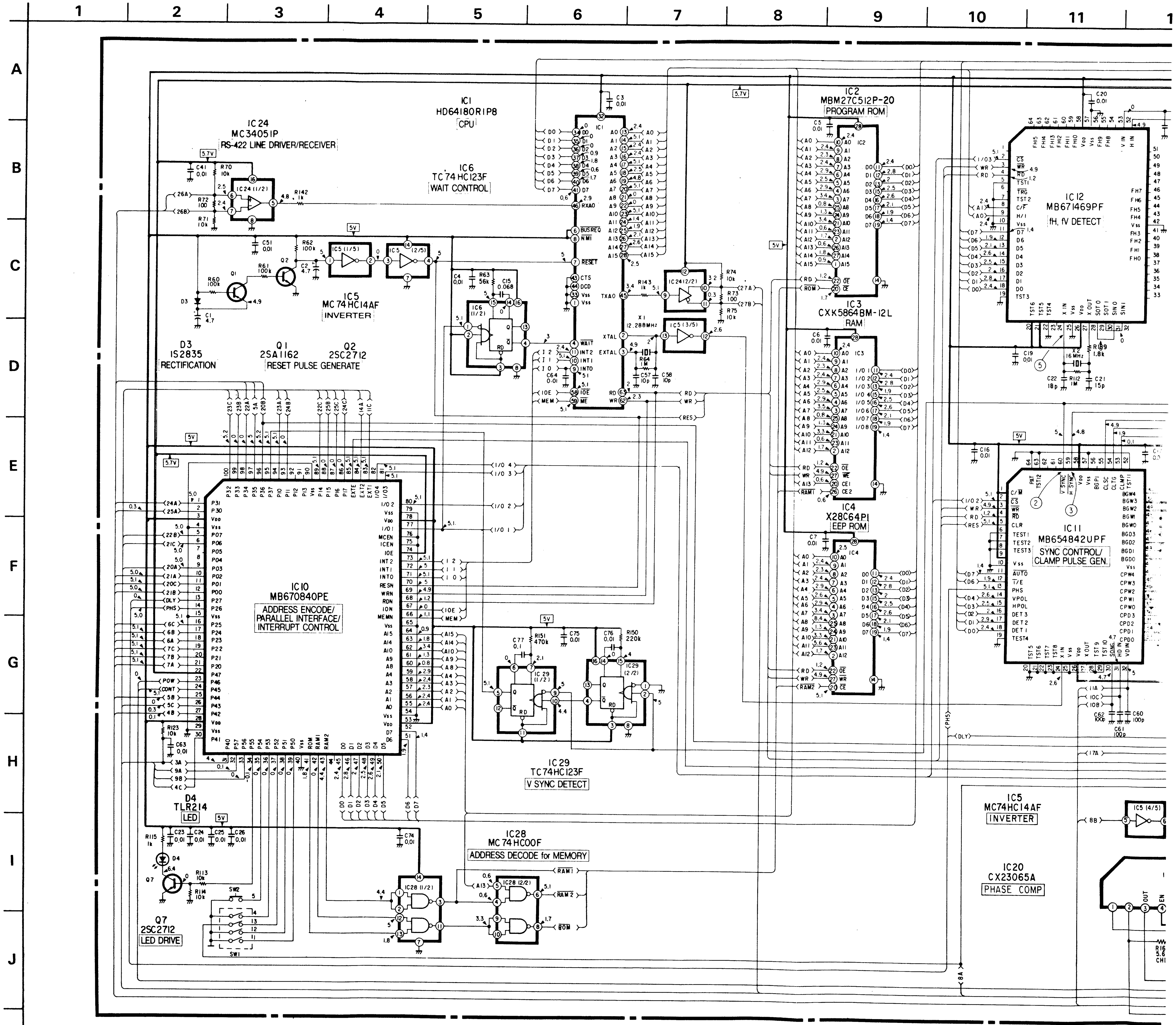
- : Pattern from the side which enables seeing.
- : Pattern of the rear side.

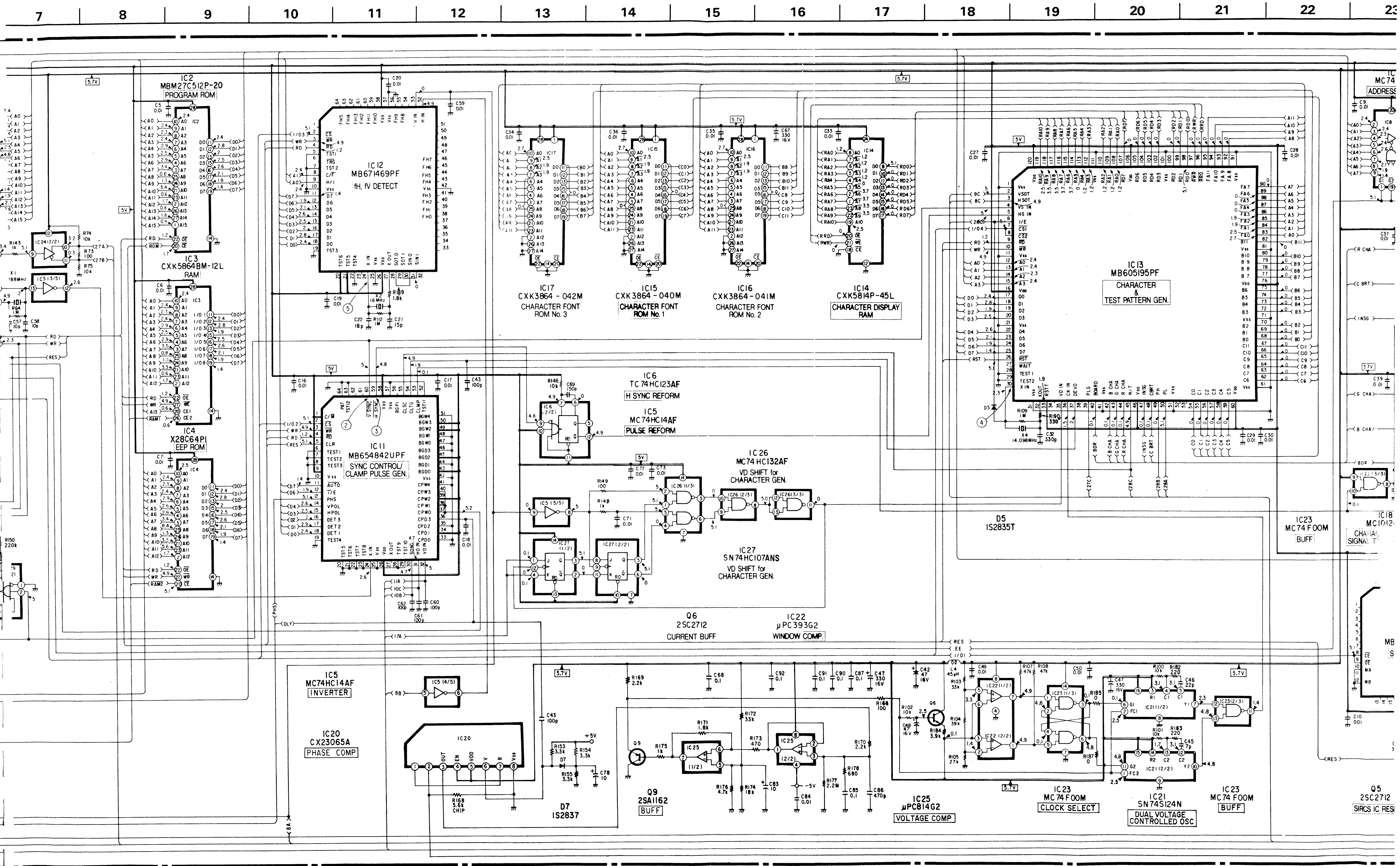
IC	
IC402	F – 24
IC403	D – 18
IC412	B – 18
IC415	F – 24
IC416	E – 24
IC417	D – 25

TRANSISTOR	
Q401	F – 23
Q402	D – 18
Q450	B – 18
Q451	B – 19
Q452	A – 19
Q453	B – 19
Q454	B – 20
Q456	A – 20
Q457	B – 18
Q501	B – 15
Q502	C – 11
Q503	B – 14
Q505	F – 15
Q506	E – 15
Q507	E – 15
Q508	D – 15
Q509	D – 15
Q510	C – 15
Q511	C – 15
Q512	C – 15
Q514	C – 20
Q515	B – 20
Q518	B – 19
Q519	B – 18
Q520	A – 21
Q521	A – 21
Q522	F – 16
Q523	F – 15
Q524	F – 16
Q525	C – 15
Q526	C – 15
Q527	C – 15
Q528	B – 15
Q529	B – 15
Q530	B – 15
Q531	B – 15
Q537	D – 15
Q538	D – 16
Q541	D – 16
Q652	E – 21
Q653	D – 21
Q654	D – 22
Q655	E – 22
Q656	D – 22
Q657	D – 23
Q658	D – 23
Q659	D – 23
Q660	D – 22
Q661	E – 22
Q662	E – 22
Q663	D – 23
Q664	E – 23
Q665	D – 23
Q666	D – 21
Q667	D – 20
Q668	D – 20
Q669	C – 22
Q670	C – 22
Q675	C – 22
Q676	C – 22
Q677	C – 22
Q678	C – 23
Q679	C – 23
Q680	D – 23
Q681	C – 23
Q687	C – 22
Q688	C – 22
Q693	B – 22
Q694	B – 23
Q695	C – 22
Q696	B – 23
Q697	B – 23
Q698	C – 23
Q699	C – 23
Q706	B – 22
Q707	B – 22
Q712	B – 22
Q713	B – 23
Q714	B – 23
Q715	B – 23
Q716	A – 23
Q717	B – 23
Q718	B – 23
Q724	D – 20
Q729	D – 21
Q731	C – 21
Q732	D – 20
Q733	C – 21
Q734	C – 21
Q735	C – 21
Q736	C – 20
Q738	C – 20
Q739	D – 21
Q740	C – 20
Q903	A – 24
Q904	A – 24
Q906	B – 24
Q908	B – 24
Q909	B – 24
Q911	C – 23
Q913	C – 24
Q918	B – 25
Q920	D – 20
Q921	D – 25
Q924	B – 25

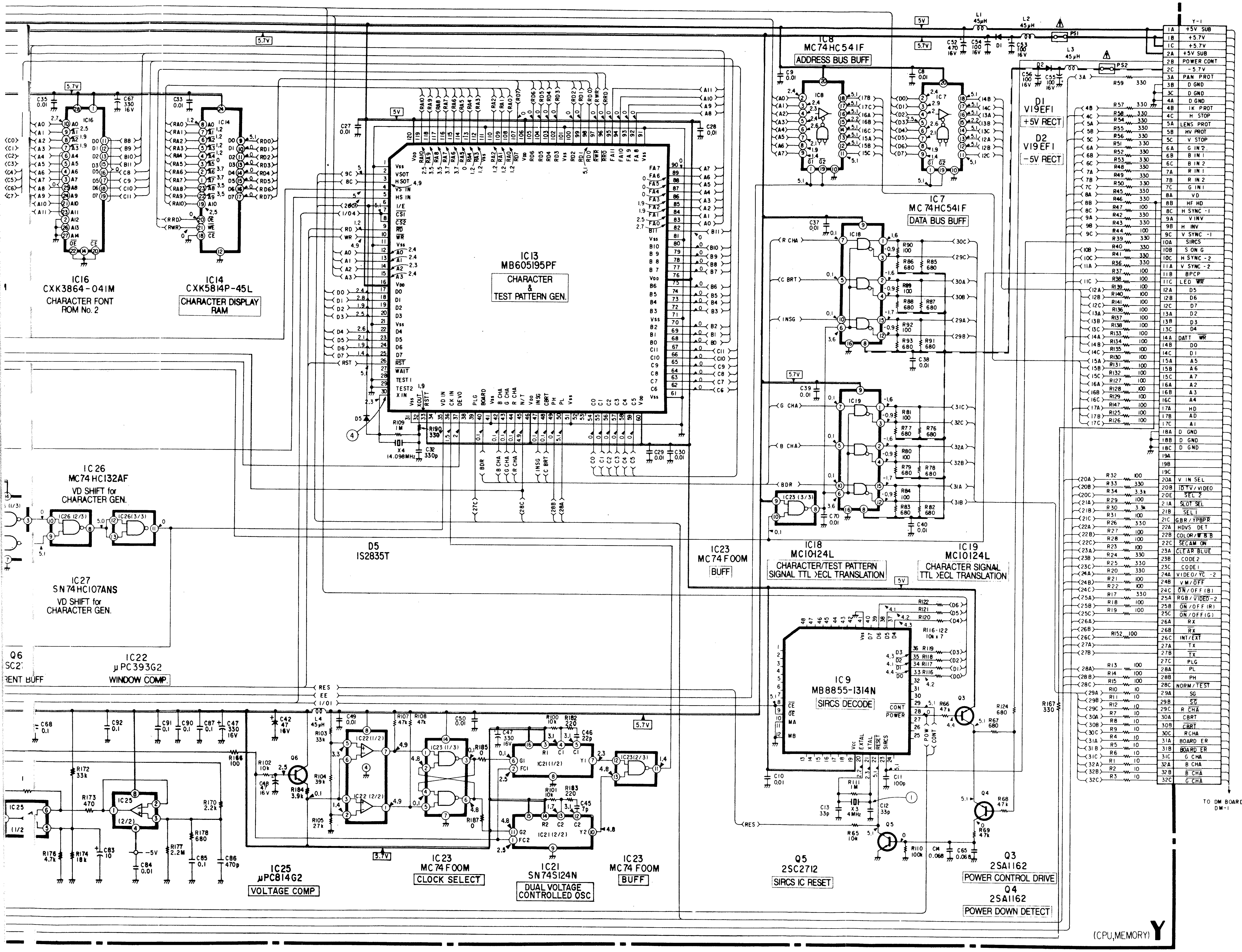
DIODE	
D401	F – 25
D402	D – 18
D450	A – 19
D451	C – 17
D452	B – 19
D501	C – 14
D502	B – 14
D503	C – 14
D504	B – 22
D506	E – 16
D507	C – 14
D508	B – 14
D509	F – 14
D510	F – 14
D511	E – 14
D512	E – 14
D513	D – 14
D514	D – 14
D515	B – 14
D516	B – 20
D518	B – 20
D520	B – 19
D521	B – 19
D522	B – 21
D523	B – 20
D530	F – 15
D901	A – 24
D903	B – 24
D905	B – 25
D906	B – 25

TP	
TP401	E – 22
TP402	F – 22
TP403	F – 22
TP404	C – 22
TP405	B – 22
TP406	D – 21
TP407	F – 22

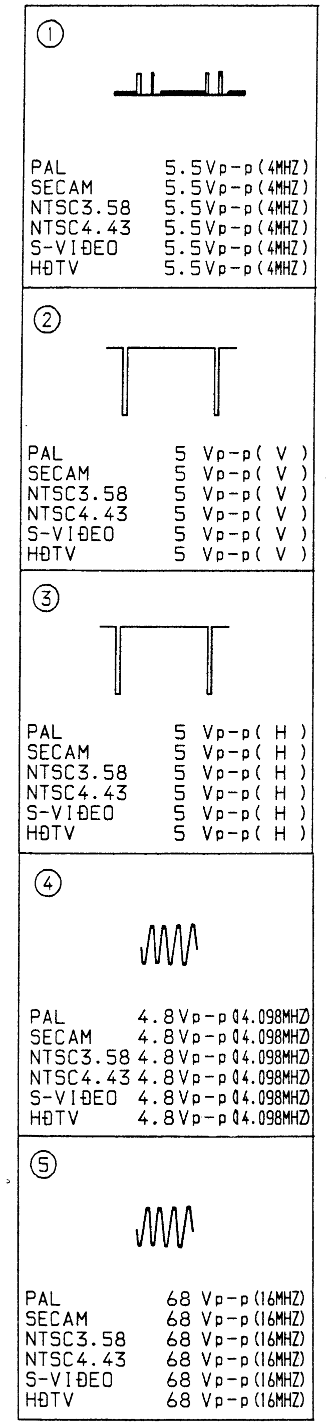

IC1
HD64180R1P8
CPU
IC24
MC3405IP
RS-422 LINE DRIVER/RECEIVER
IC6
TC74HC123F
WAIT CONTROL
IC5
MC74HC14AF
INVERTER
D3
1S2835
RECTIFICATION
Q1
2SA1162
Q2
2SC2712
RESET PULSE GENERATE
IC2
MBM27C512P-20
PROGRAM ROM
IC3
CXK5864BM-12L
RAM
IC4
X28C64P1
EEP ROM
IC12
MB671469PF
fH, fV DETECT
IC11
MB654842UPF
SYNC CONTROL/
CLAMP PULSE GEN.
IC10
MB670840PE
ADDRESS ENCODE/
PARALLEL INTERFACE/
INTERRUPT CONTROL
IC29
TC74HC123F
V SYNC DETECT
D4
TLR214
LED
Q7
2SC2712
LED DRIVE
IC28
MC74HC00F
ADDRESS DECODE for MEMORY
IC5
MC74HC14AF
INVERTER
IC20
CX23065A
PHASE COMP


7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22
IC2
MBM27C512P-20
PROGRAM ROM
IC3
CXK5864BM-12L
RAM
IC4
X28C64PI
EEP ROM
IC12
MB671469PF
fH, fV DETECT
IC11
MB654842UPF
SYNC CONTROL/
CLAMP PULSE GEN.
IC17
CXK3864-042M
CHARACTER FONT
ROM No. 3
IC15
CXK3864-040M
CHARACTER FONT
ROM No. 1
IC16
CXK3864-041M
CHARACTER FONT
ROM No. 2
IC14
CXK5814P-45L
CHARACTER DISPLAY
RAM
IC13
MB605195PF
CHARACTER
&
TEST PATTERN GEN.
IC6
TC74HC123AF
H SYNC REFORM
IC5
MC74HC14AF
PULSE REFORM
IC26
MC74HC132AF
VD SHIFT for
CHARACTER GEN.
IC27
SN74HC107ANS
VD SHIFT for
CHARACTER GEN.
D5
1S2835T
IC23
MC74F00M
BUFF
Q6
2SC2712
CURRENT BUFF
IC22
μPC393G2
WINDOW COMP.
IC5
MC74HC14AF
INVERTER
IC20
CX23065A
PHASE COMP
D7
1S2837
Q9
2SA1162
BUFF
IC25
μPC814G2
VOLTAGE COMP
IC23
MC74F00M
CLOCK SELECT
IC21
SN74S124N
DUAL VOLTAGE
CONTROLLED OSC
IC23
MC74F00M
BUFF
Q5
2SC2712

15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30



Y BOARD WAVEFORMS

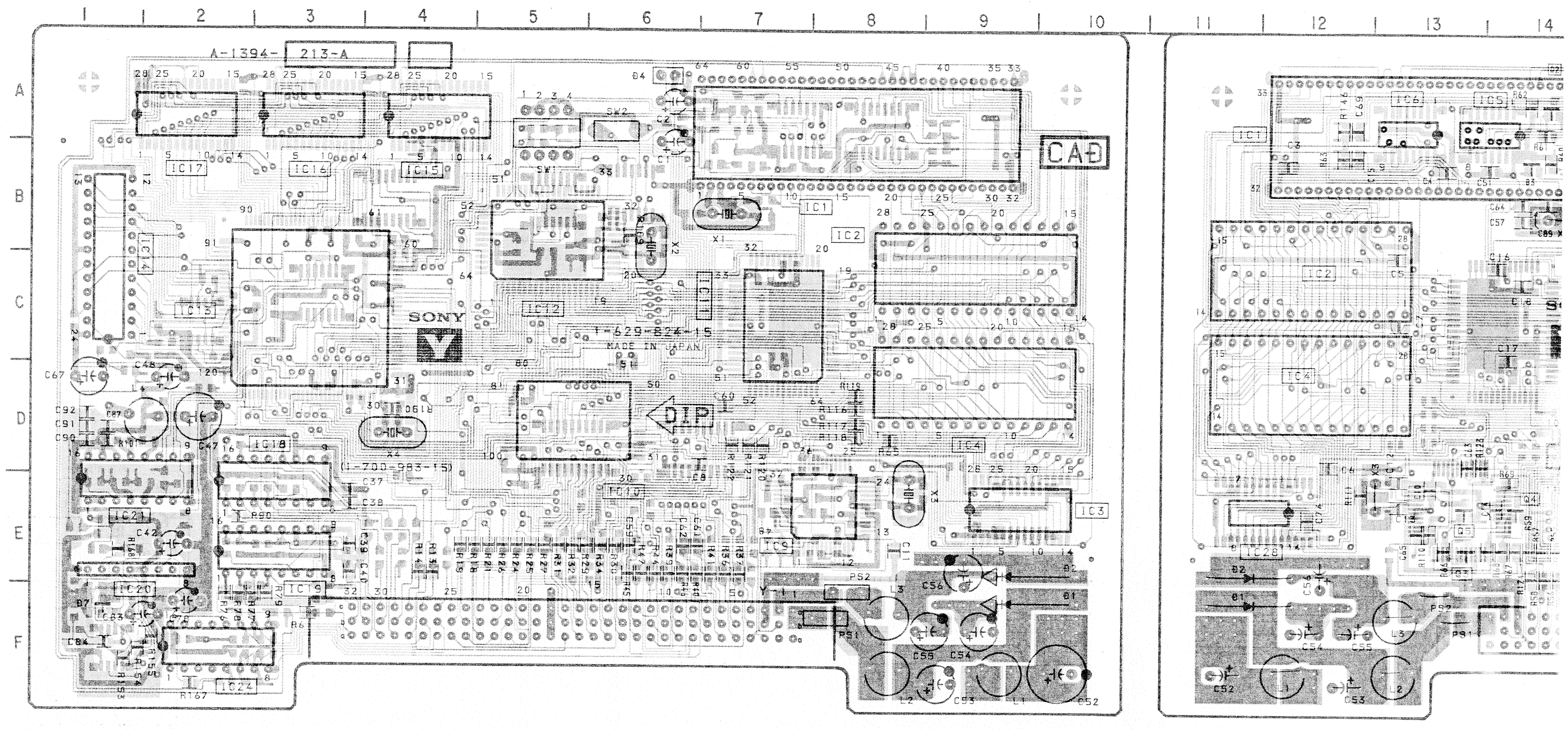


Y [CPU MEMORY]

– Y BOARD – (COMPOMENT SIDE) (CONDUCTOR SIDE)

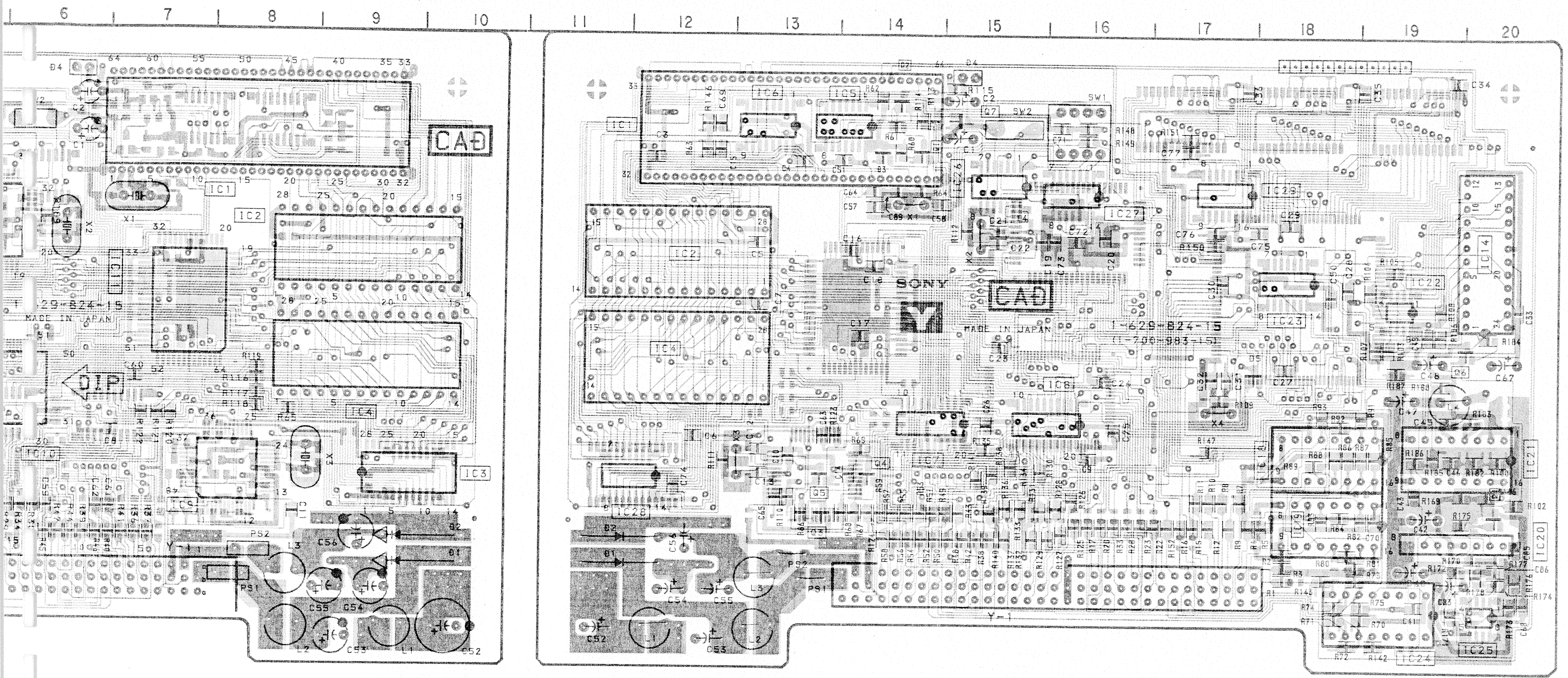
IC	
IC1	A – 8
IC2	C – 9
IC3	E – 9
IC4	D – 9
IC9	E – 7
IC10	D – 5
IC11	C – 7
IC12	C – 5
IC13	C – 2
IC14	C – 1
IC15	A – 4
IC16	A – 3
IC17	A – 2
IC18	E – 3
IC19	E – 3
IC20	E – 1
IC21	E – 1
IC24	F – 2

DIODE	
D1	F – 10
D2	E – 10
D4	A – 6
D7	F – 1



Y [CPU MEMORY]

(CONDUCTOR SIDE)



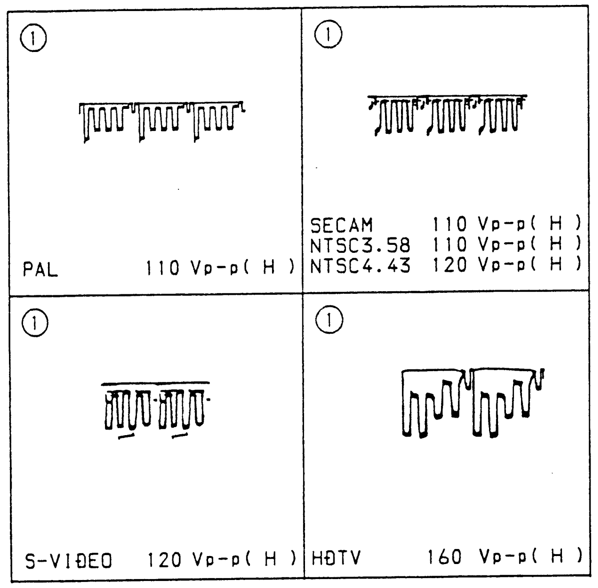
IC	
IC2	C-12
IC4	D-12
IC5	A-13
IC6	A-13
IC7	D-14
IC8	D-16
IC14	C-20
IC18	E-18
IC19	E-18
IC20	E-20
IC21	E-20
IC22	C-19
IC23	C-18
IC24	F-19
IC25	F-20
IC26	B-15
IC27	B-16
IC28	E-12
IC29	B-17

TRANSISTOR	
Q1	B-14
Q2	A-14
Q3	E-13
Q4	E-14
Q5	E-13
Q6	D-19
Q7	A-15
Q9	E-20

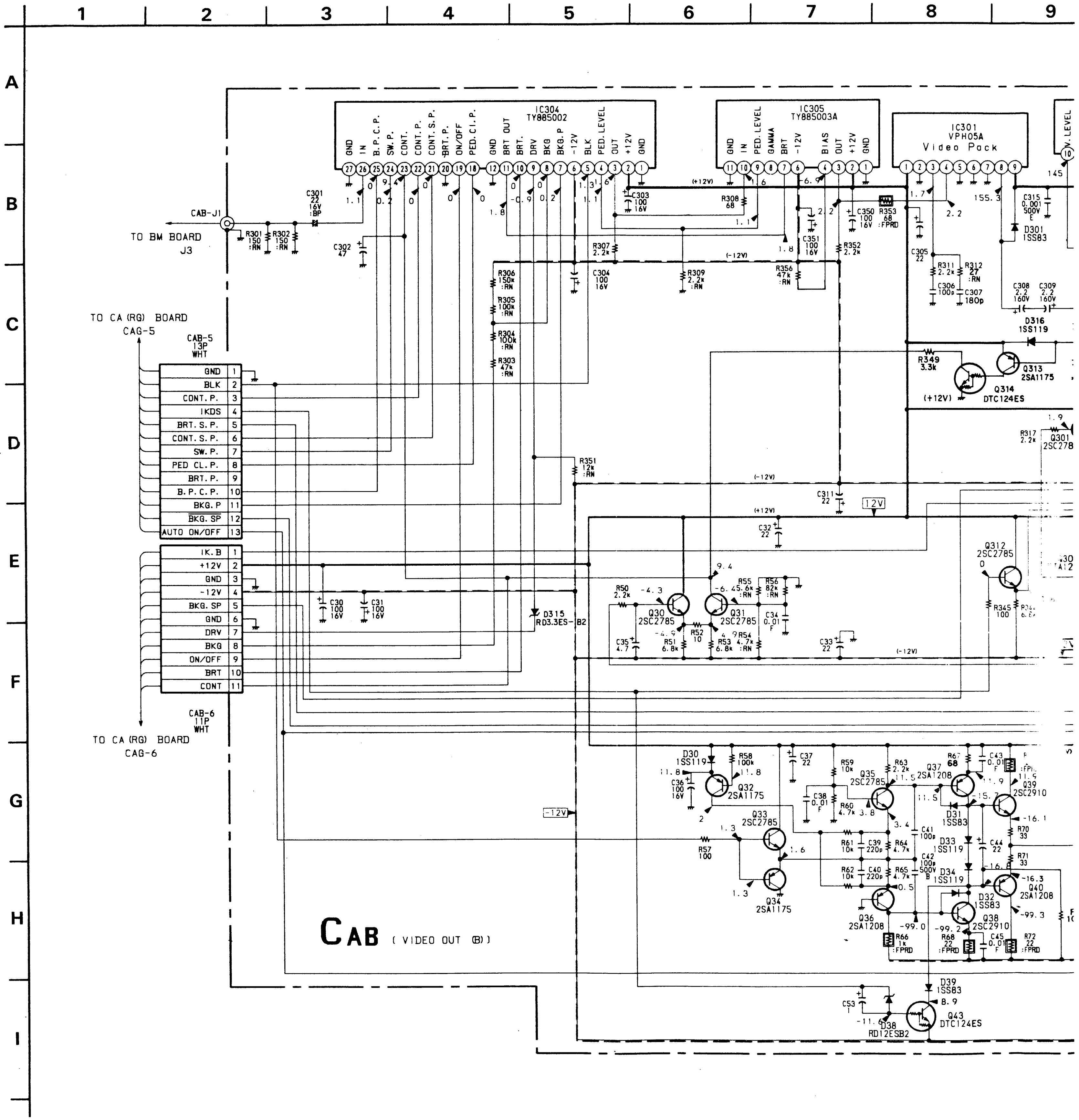
DIODE	
D1	F-11
D2	E-11
D3	B-14
D4	A-15
D5	D-17

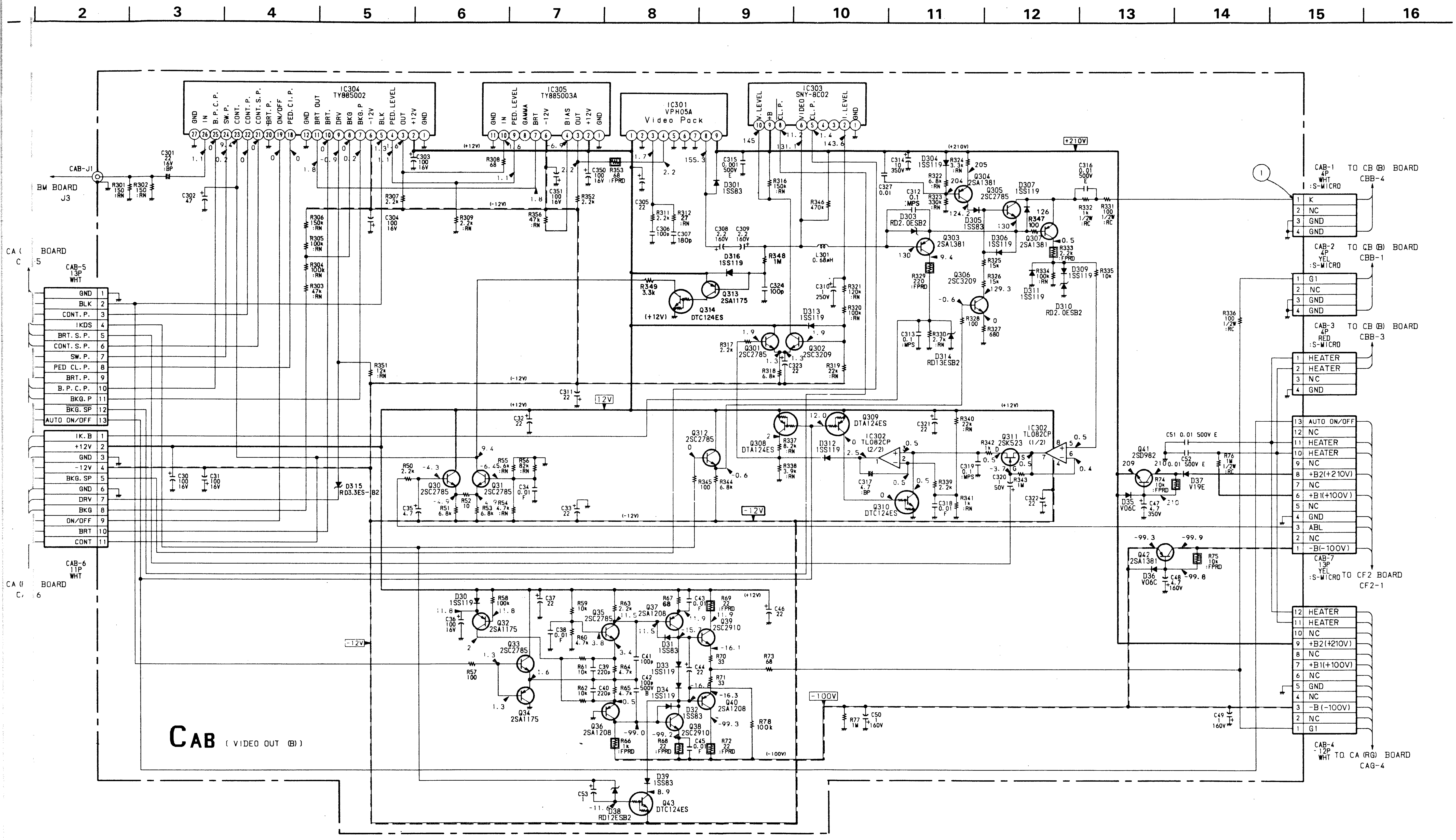
Note :
- ▒ : Pattern from the side which enables seeing.
- ▒ : Pattern of the rear side.

CA(B) BOARD WAVEFORMS



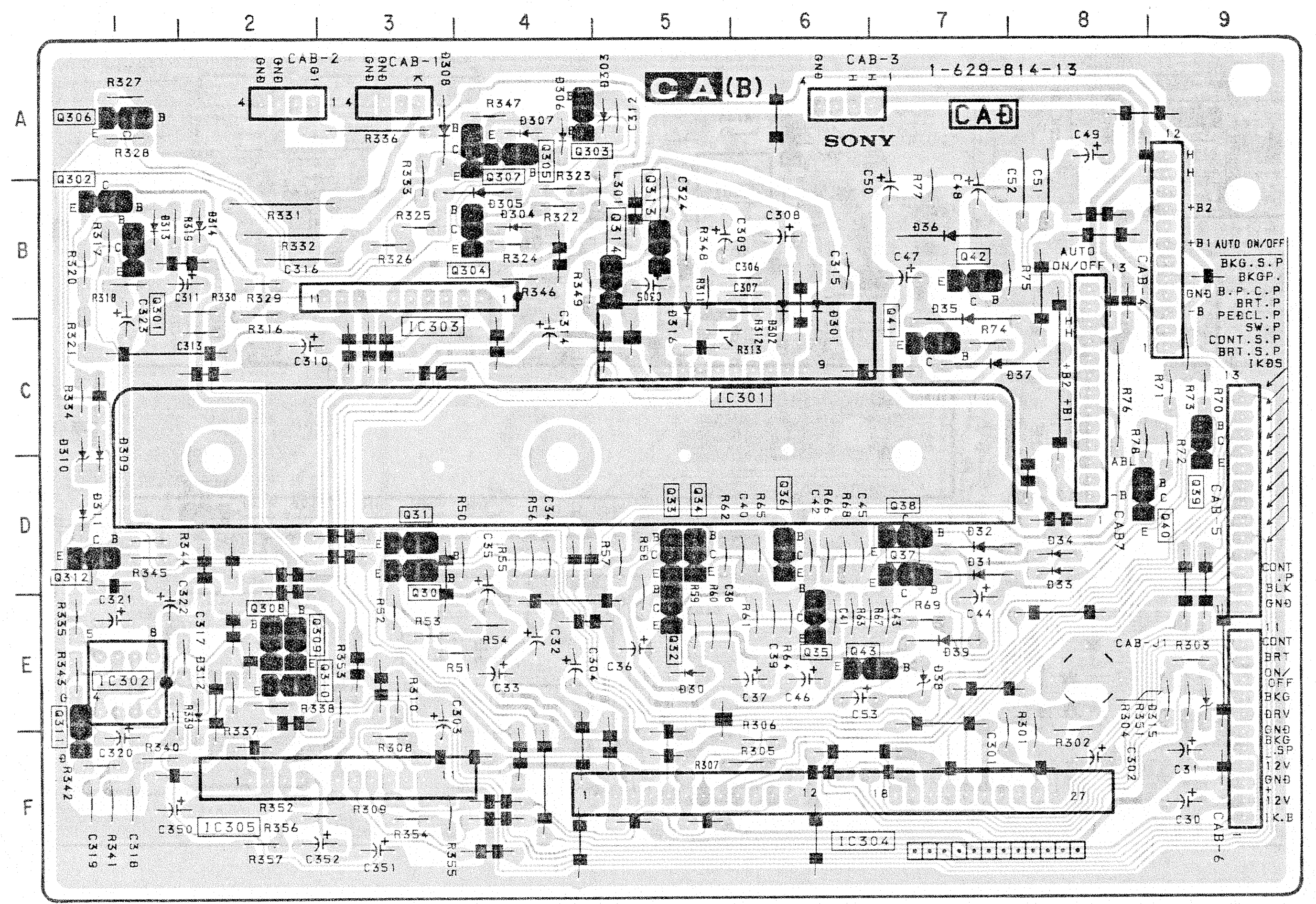
IC301	VPH05	B VIDEO OUT
IC302	TL082CP	B AUTO BKG
IC303	SNY-8C02	B CLAMP
IC304	TY885002	B SIGNAL PROCESS
IC305	TY885003	B γ CORR
Q30	2SC2785	Σ ABL
Q31	2SC2785	Σ ABL
Q32	2SA1175	OFF SPOT PROT
Q33	2SC2785	BLK
Q34	2SA1175	BLK
Q35	2SC2785	BLK
Q36	2SA1208	BLK
Q37	2SA1208	BLK
Q38	2SC2910	BLK
Q39	2SC2910	BLK
Q40	2SA1208	BLK
Q41	2SD982	+ 210V RIPPLE FILTER
Q42	2SA1381	− 100V RIPPLE FILTER
Q43	DTC124ES	BRT PULSE GEN
Q301	2SC2785	B CLAMP
Q302	2S3209	B CLAMP
Q303	2SA1381	B IK DET-1
Q304	2SA1381	B CURRENT SOURCE
Q305	2SC2785	B IK DET-2
Q306	2SC3209	B IK DET-2
Q307	2SA1381	B IK DET-2
Q308	DTA124ES	B AUTO BKG SW
Q309	DTA124ES	B AUTO BKG SW
Q310	DTC124ES	B AUTO BKG SW
Q311	2SK523	B AUTO BKG
Q312	2SC2785	B IK DET-2
D30	1SS119	OFF SPOT PROT
D31	1SS83	BLK
D32	1SS83	BLK
D33	1SS119	BLK
D34	1SS119	BLK
D35	V06C	+ 12V RIPPLE FILTER PROT
D36	V06C	− 100V RIPPLE FILTER PROT
D37	V19E	+ 210V RIPPLE FILTER PROT
D38	RD12ESB2	BRT PULSE GEN
D39	1SS83	BRT PULSE GEN
D301	1SS83	B VIDEO OUT PROT
D303	RD2.0ESB2	B IK DET-1 PORT
D304	1SS119	B THERM COMP
D305	1SS83	B IK DET-2 PORT
D306	1SS119	B IK DET-2 PORT
D307	1SS119	B IK DET-2 PORT
D309	1SS119	B IK DET-2 PORT
D310	RD2.0ESB2	B IK DET-2 PORT
D311	1SS119	B IK DET-2 PORT
D312	1SS119	B AUTO BKG SW
D313	1SS119	B OFF SPOT PROT
D314	RD13ESB2	B IK DET-2 PORT
D315	RD3.3ESB2	B DRV




CAB (VIDEO OUT (B))
IC304 TY885002
IC305 TY885003A
IC301 VPH05A Video Pack
IC303 SNY-8C02
IC302 TL082CP
BM BOARD J3
CAB-5 13P WHT
CAB-6 11P WHT
CAB-1 TO CB (B) BOARD CBB-4
CAB-2 TO CB (B) BOARD CBB-1
CAB-3 TO CB (B) BOARD CBB-3
CAB-7 13P YEL :S-MICRO TO CF2 BOARD CF2-1
CAB-4 12P WHT TO CA (RG) BOARD CAG-4

CA(B) [VIDEO OUT(B)]

– CA(B) BOARD –



IC	
IC301	C – 5
IC302	E – 1
IC303	C – 3
IC304	F – 6
IC305	F – 2

TRANSISTOR	
Q30	D – 3
Q31	D – 3
Q32	E – 5
Q33	D – 5
Q34	D – 5
Q35	E – 6
Q36	D – 6
Q37	D – 7
Q38	D – 7
Q39	D – 9
Q40	D – 8
Q41	C – 7
Q42	B – 7
Q43	E – 6
Q301	B – 1
Q302	B – 1
Q303	A – 4
Q304	B – 4
Q305	A – 4
Q306	A – 1
Q307	A – 4
Q308	E – 2
Q309	E – 2
Q310	E – 2
Q311	E – 1
Q312	D – 1
Q313	B – 5
Q314	B – 5

DIODE	
D30	E – 5
D31	D – 7
D32	D – 7
D33	D – 8
D34	D – 8
D35	B – 7
D36	B – 7
D37	C – 7
D38	E – 7
D39	E – 7
D301	C – 6
D303	A – 5
D304	B – 4
D305	B – 4
D306	A – 4
D307	A – 4
D309	C – 1
D310	C – 1
D311	D – 1
D312	E – 2
D313	A – 1
D314	B – 2
D315	E – 8
D316	C – 5

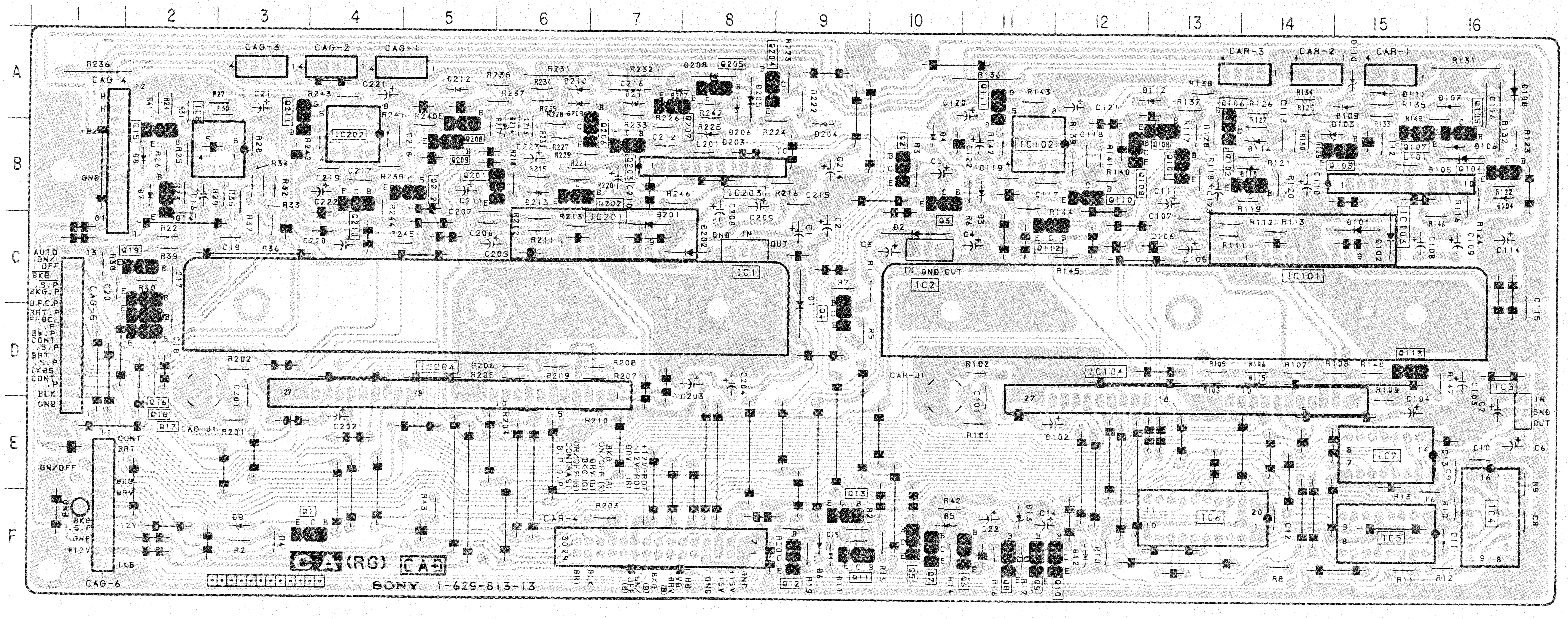
CA(RG) [VIDEO OUT(R)] [VIDEO OUT(G)]

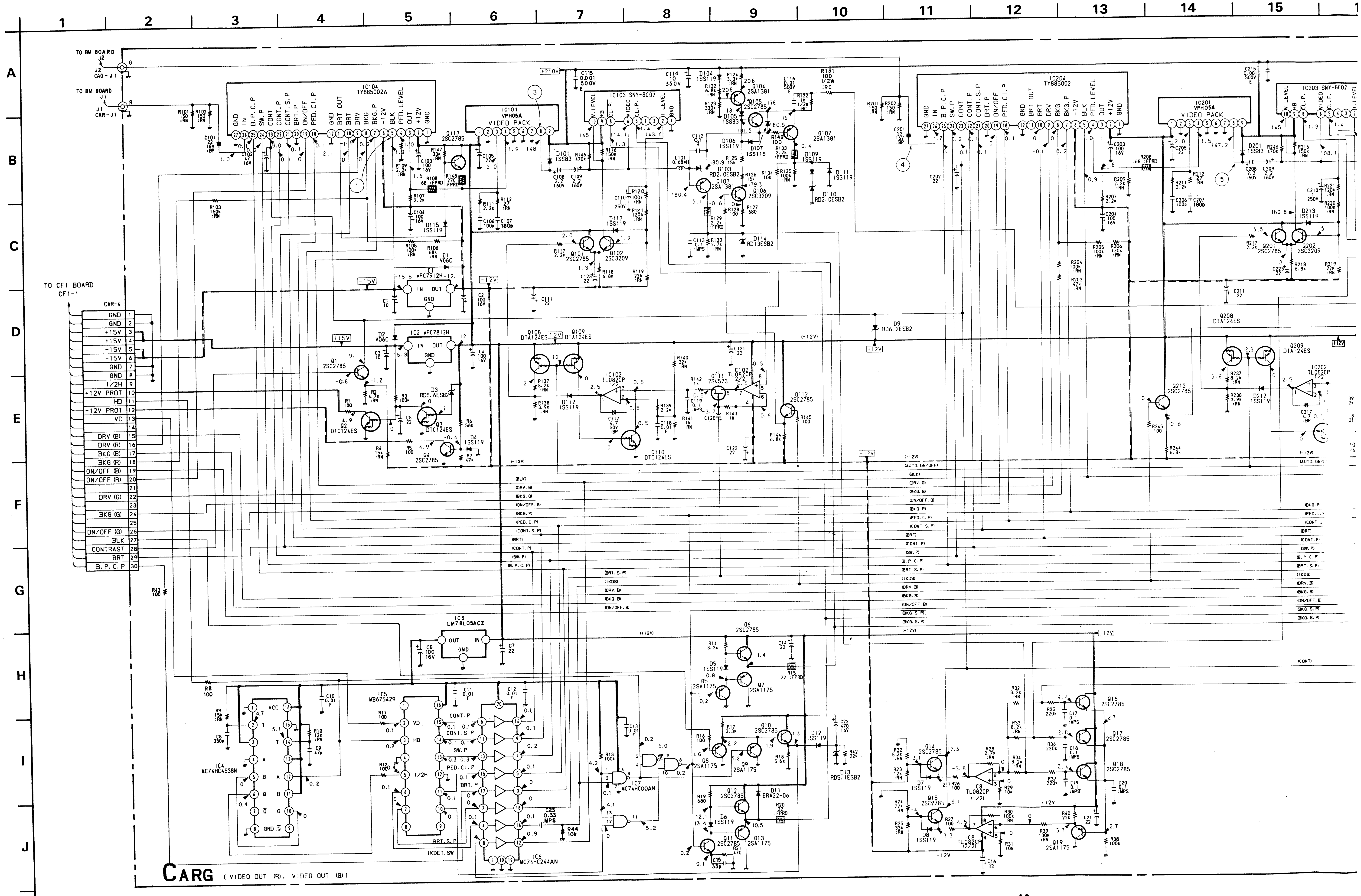
IC	
IC1	C-8
IC2	C-10
IC3	E-17
IC4	F-16
IC5	F-15
IC6	F-13
IC7	E-15
IC8	B-2
IC101	C-14
IC102	B-11
IC103	B-15
IC104	D-12
IC201	C-7
IC202	B-4
IC203	B-8
IC204	D-5

TRANSISTOR	
Q1	F-13
Q2	B-10
Q3	B-10
Q4	D-9
Q5	F-10
Q6	F-10
Q7	F-10
Q8	F-11
Q9	F-11
Q10	F-12
Q11	F-9
Q12	F-9
Q13	F-9
Q14	C-2
Q15	B-2
Q16	E-2
Q17	E-2
Q18	E-2
Q19	C-2
Q101	B-13
Q102	B-14
Q103	B-15
Q104	B-16
Q105	A-16
Q106	A-13
Q107	B-15
Q108	B-13
Q109	B-12
Q110	B-12
Q111	A-11
Q112	C-11
Q113	D-15
Q201	B-5
Q202	B-6
Q203	B-7
Q204	A-8
Q205	A-8
Q206	B-6
Q207	A-7
Q208	B-5
Q209	B-5
Q210	C-4
Q211	A-3
Q212	B-5

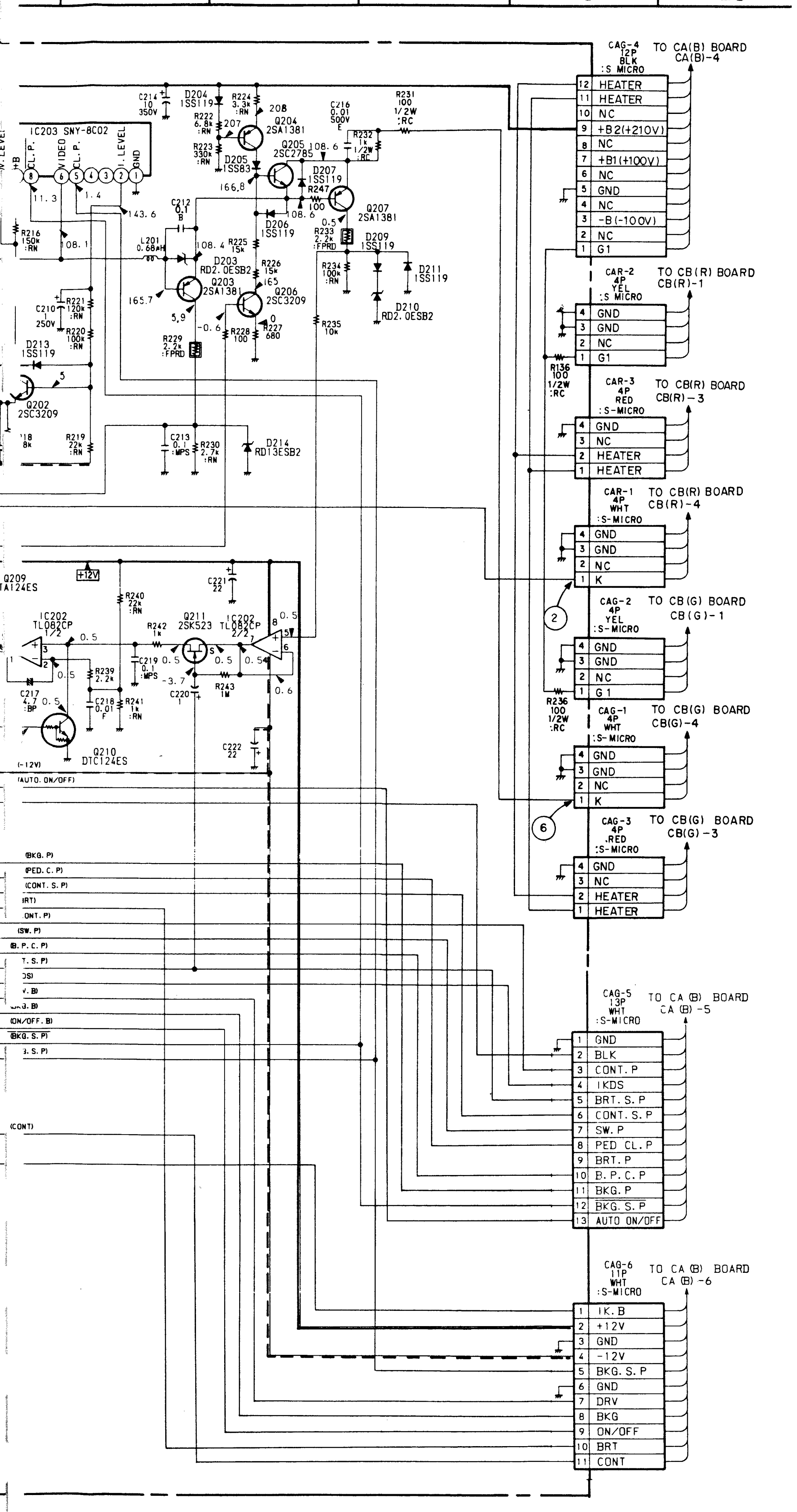
DIODE	
D1	C-9
D2	C-10
D3	B-11
D4	B-10
D5	F-10
D6	F-9
D7	B-2
D8	B-2
D9	F-3
D11	F-9
D12	F-12
D13	F-13
D101	C-15
D103	B-14
D104	B-16
D105	B-16
D106	B-16
D107	A-16
D109	A-15
D110	A-15
D111	A-15
D112	A-12
D113	B-14
D114	B-14
D115	D-14
D201	C-7
D203	B-8
D204	B-9
D205	A-8
D206	B-8
D207	A-7
D209	A-6
D210	A-6
D211	A-7
D212	A-5
D213	B-6
D214	A-6

– CA(RG) BOARD –



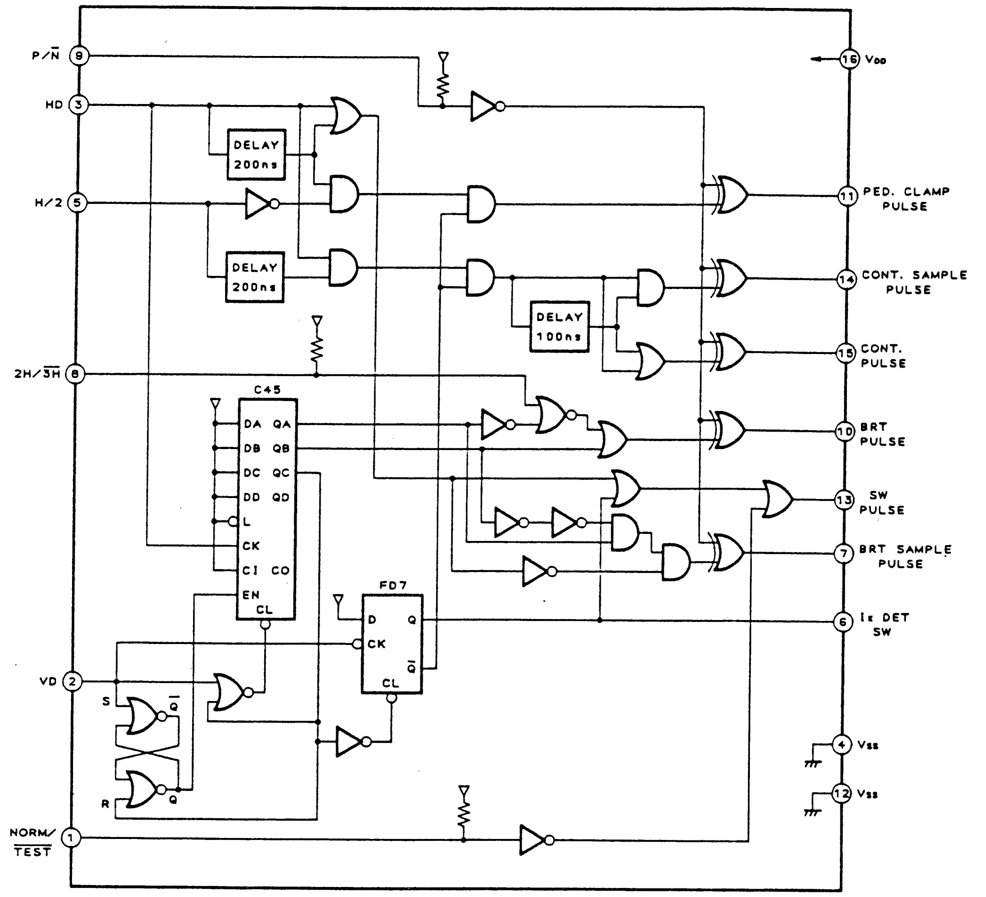


CARG (VIDEO OUT (R), VIDEO OUT (G))

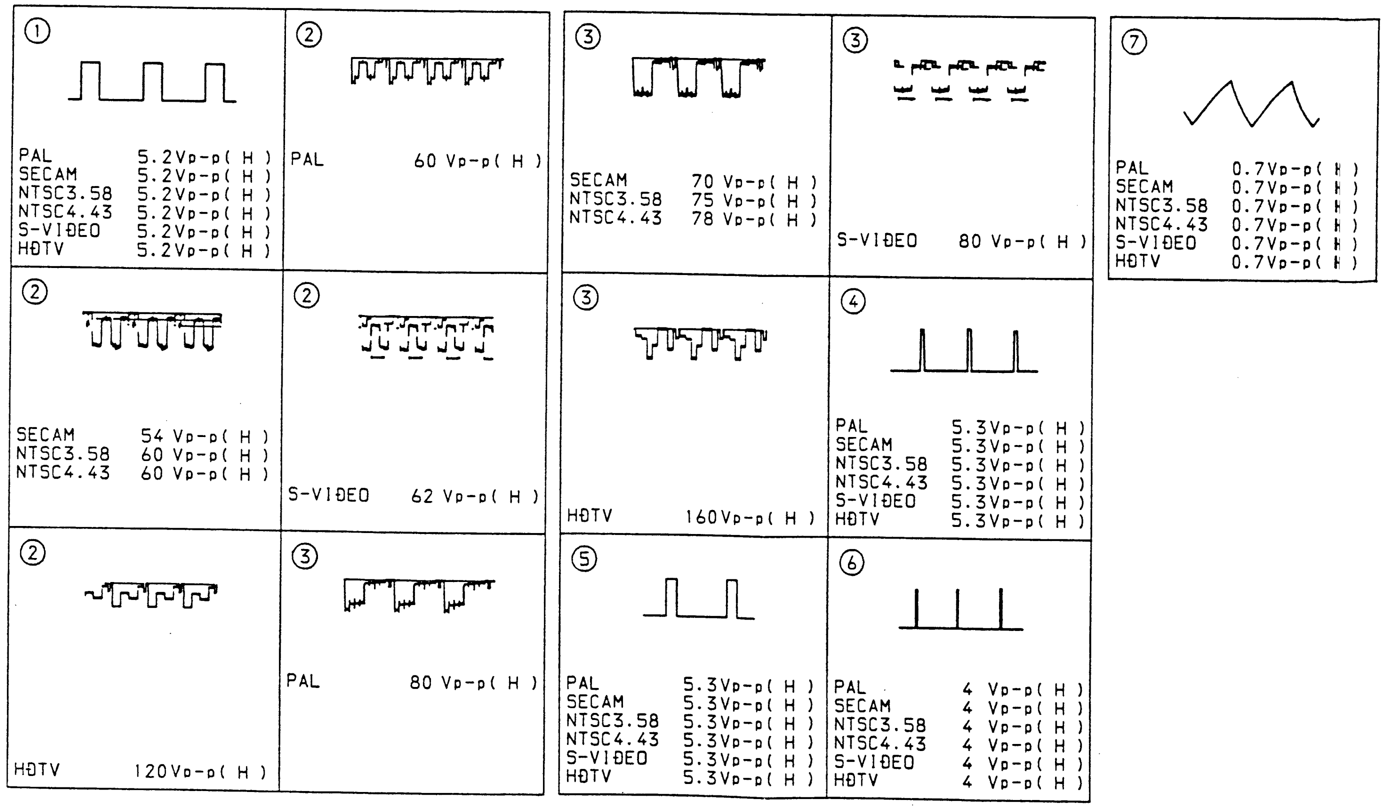


IC1	μPC7912H	−12V REG
IC2	μPC7812H	+12V REG
IC3	μPC78L05ACZ	+5V REG
IC4	MC74HC4538N	PULSE GEN
IC5	MB675429	PULSE GEN
IC6	MC74HC24AN	PULSE GEN
IC7	MC74HC00AN	PULSE GEN
IC8	TL082CP	PEAK & S. T. ABL
IC101	VPH05	R VIDEO OUT
IC102	TL082CP	R AUDIO BKG
IC103	SNY-8C02	R CLAMP
IC104	TY885002	R SIGNAL PROCESS
IC201	VPH05	G VIDEO OUT
IC202	TL082CP	G AUTO BKG
IC203	SNY-8C02	G CLAMP
IC204	TY885002	G SIGNAL PROCESS
Q1	2SC2785	CONTRAST CONTROL
Q2	DTC124ES	+12V PROT
Q3	DTC124ES	+12V PROT
Q4	2SC2785	−12V PROT
Q5	2SA1175	BKG S. P. GEN
Q6	2SC2785	BKG S. P. GEN
Q7	2SA1175	BKG S. P. GEN
Q8	2SA1175	BKG P. GEN
Q9	2SA1175	BKG P. GEN
Q10	2SC2785	BKG P. GEN
Q11	2SC2785	BKG S. P. GEN
Q12	2SC2785	BKG S. P. GEN
Q13	2SA1175	BKG S. P. GEN
Q14	2SC2785	PEAK ABL
Q15	2SC2785	S. T. ABL
Q16	2SC2785	B. S. T. ABL
Q17	2SC2785	G. S. T. ABL
Q18	2SC2785	R. S. T. ABL
Q19	2SA1175	S. T. ABL
Q101	2SC2785	R CLAMP
Q102	2SC3209	R CLAMP
Q103	2SA1381	R IK DET-1
Q104	2SA1381	R CURRENT SOURCE
Q105	2SC2785	R IK DET-2
Q106	2SC3209	R IK DET-2
Q107	2SA1381	R IK DET-2
Q108	DTA124ES	R AUTO BKG SW
Q109	DTA124ES	R AUTO BKG SW
Q110	DTC124ES	R AUTO BKG SW
Q111	2SK523	R AUTO BKG
Q112	2SC2785	R IK DET-2
Q113	2SC2785	R γ CORR
Q201	2SC2785	G CLAMP
Q202	2SC3209	G CLAMP
Q203	2SA1381	G IK DET-1
Q204	2SA1381	G CURRENT SOURCE
Q205	2SC2785	G IK DET-2
Q206	2SC3209	G IK DET-2
Q207	2SA1381	G IK DET-2
Q208	DTA124ES	G AUTO BKG SW
Q209	DTA124ES	G AUTO BKG SW
Q210	DTC124ES	G AUTO BKG SW
Q211	2SK523	G AUTO BKG
Q212	2SC2785	G IK DET-2
D1	V06C	−12V REG PROT
D2	V06C	+12V REG PROT
D3	RD5.6ESB2	+12V PROT
D4	1SS119	−12V PROT
D5	1SS119	BIAS
D6	1SS119	BIAS
D7	1SS119	PEAK ABL
D8	1SS119	S. T. ABL
D9	RD6.2ESB2	CONT PROT
D11	ERA22-06	PROT
D12	1SS119	ON SPOT PROT
D13	RD5.1ESB2	ON SPOT PROT
D101	1SS83	R VIDEO OUT PROT
D103	RD2.0ESB2	R IK DET-1 PROT
D104	1SS119	R THERM COMP
D105	1SS83	R IK DET-2 PROT
D106	1SS119	R IK DET-2 PROT
D107	1SS119	R IK DET-2 PROT
D109	1SS119	R IK DET-2 PROT
D110	RD2.0ESB2	R IK DET-2 PROT
D111	1SS119	R IK DET-2 PROT
D112	1SS119	R AUTO BKG SW
D113	1SS119	R OFF SPOT PROT
D114	RD13ESB2	R IK DET-1 PROT
D115	1SS119	R γ CORR
D201	1SS83	G VIDEO OUT PROT
D203	RD2.0ESB2	G IK DET-1 PROT
D204	1SS119	G THERM COMP
D205	1SS83	G IK DET-2T PROT
D206	1SS119	G IK DET-2T PROT
D207	1SS119	G IK DET-2T PROT
D209	1SS119	G IK DET-2T PROT
D210	RD2.0ESB2	G IK DET-2T PROT
D211	1SS119	G IK DET-2T PROT
D212	1SS119	G AUTO BKG SW
D213	1SS119	G OFF SPOT PROT
D214	RD13ESB2	G IK DET-1 PROT

CA(RG) BOARD IC5 MB675429



CA(RG) BOARD WAVEFORMS



HDIH-1200M
RM-1200

SECTION 9
ELECTRICAL PARTS LIST

BA

NOTE:

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

RESISTORS
- All resistors are in ohms
- F : nonflammable

When indicating parts by reference number, please include the board name.

CAPACITORS
- MF : μF, PF : μμF

COILS
- MMH : mH, UH : μH

- The components identified by ⊠ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.
- ✱ : Selected to yield optimum performance.
- There are some cases the reference number on one board overlaps on the other board. Therefore, when ordering parts by the reference number, please include the board name.

REF.NO.	PART NO.	DESCRIPTION			REMARK
	*A-1135-585-A	BA BOARD, COMPLETE			
		******************			
	*1-568-984-11	CONNECTOR, MALE 96P			

<FILTER>

REF.NO.	PART NO.	DESCRIPTION
BPF001	1-236-366-11	MODULE, TRAP
BPF002	1-236-365-11	MODULE, TRAP
BPF003	1-236-063-11	MODULE, B.P.F

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION			REMARK
C001	1-124-477-11	ELECT	47MF	20%	16V
C002	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C003	1-126-233-11	ELECT	22MF	20%	50V
C004	1-126-233-11	ELECT	22MF	20%	50V
C005	1-126-233-11	ELECT	22MF	20%	50V
C006	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C007	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C008	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C009	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C010	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C011	1-126-101-11	ELECT	100MF	20%	16V
C012	1-124-907-11	ELECT	10MF	20%	50V
C013	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C014	1-126-233-11	ELECT	22MF	20%	50V
C015	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C016	1-126-233-11	ELECT	22MF	20%	50V
C017	1-126-101-11	ELECT	100MF	20%	16V
C018	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C019	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C020	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C021	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C022	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C023	1-163-222-11	CERAMIC CHIP	5PF	0.25PF	50V
C024	1-163-275-11	CERAMIC CHIP	0.001MF	5%	50V
C027	1-124-907-11	ELECT	10MF	20%	50V
C030	1-163-213-00	CERAMIC CHIP	0.0022MF	10%	50V
C041	1-126-233-11	ELECT	22MF	20%	50V
C101	1-124-119-00	ELECT	330MF	20%	16V
C102	1-124-119-00	ELECT	330MF	20%	16V
C103	1-163-245-11	CERAMIC CHIP	56PF	5%	50V
C104	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C105	1-136-153-00	FILM	0.01MF	5%	50V
C106	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C107	1-163-119-00	CERAMIC CHIP	120PF	5%	50V
C108	1-163-241-11	CERAMIC CHIP	39PF	5%	50V
C109	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C110	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C111	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C112	1-163-119-00	CERAMIC CHIP	120PF	5%	50V
C113	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C114	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C115	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C116	1-124-903-11	ELECT	1MF	20%	50V
C117	1-124-903-11	ELECT	1MF	20%	50V
C118	1-136-173-00	FILM	0.47MF	5%	50V
C119	1-136-161-00	FILM	0.047MF	5%	50V
C120	1-136-157-00	FILM	0.022MF	5%	50V
C121	1-136-157-00	FILM	0.022MF	5%	50V
C122	1-163-119-00	CERAMIC CHIP	120PF	5%	50V
C123	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C124	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C130	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C131	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C132	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C133	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C134	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C150	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C151	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C152	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C153	1-163-127-00	CERAMIC CHIP	270PF	5%	50V
C154	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C201	1-124-477-11	ELECT	47MF	20%	16V
C202	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C203	1-126-233-11	ELECT	22MF	20%	50V
C204	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C205	1-126-233-11	ELECT	22MF	20%	50V
C206	1-136-169-00	FILM	0.22MF	5%	50V
C207	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C208	1-124-902-00	ELECT	0.47MF	20%	50V
C209	1-124-902-00	ELECT	0.47MF	20%	50V
C210	1-124-902-00	ELECT	0.47MF	20%	50V
C214	1-126-233-11	ELECT	22MF	20%	50V
C215	1-124-477-11	ELECT	47MF	20%	16V
C216	1-124-464-11	ELECT	0.22MF	20%	50V
C217	1-124-464-11	ELECT	0.22MF	20%	50V
C218	1-124-477-11	ELECT	47MF	20%	16V
C219	1-136-157-00	FILM	0.022MF	5%	50V
C220	1-130-471-00	MYLAR	0.001MF	5%	50V
C221	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C222	1-136-169-00	FILM	0.22MF	5%	50V
C223	1-136-153-00	FILM	0.01MF	5%	50V
C224	1-124-463-00	ELECT	0.1MF	20%	50V
C225	1-130-479-00	MYLAR	0.0047MF	5%	50V
C226	1-124-903-11	ELECT	1MF	20%	50V
C227	1-136-153-00	FILM	0.01MF	5%	50V
C228	1-124-927-11	ELECT	4.7MF	20%	50V
C229	1-124-927-11	ELECT	4.7MF	20%	50V
C230	1-130-477-00	MYLAR	0.0033MF	5%	50V
C231	1-130-481-00	MYLAR	0.0068MF	5%	50V
C232	1-130-476-00	MYLAR	0.0027MF	5%	50V

BA

REF.NO.	PART NO.	DESCRIPTION			REMARK
C233	1-136-161-00	FILM	0.047MF	5%	50V
C235	1-124-925-11	ELECT	2.2MF	20%	50V
C236	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C237	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C238	1-124-925-11	ELECT	2.2MF	20%	50V
C239	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C240	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C241	1-124-925-11	ELECT	2.2MF	20%	50V
C242	1-124-925-11	ELECT	2.2MF	20%	50V
C243	1-124-925-11	ELECT	2.2MF	20%	50V
C244	1-124-907-11	ELECT	10MF	20%	50V
C245	1-124-907-11	ELECT	10MF	20%	50V
C246	1-124-907-11	ELECT	10MF	20%	50V
C247	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C249	1-126-101-11	ELECT	100MF	20%	16V
C250	1-124-120-11	ELECT	220MF	20%	16V
C251	1-126-101-11	ELECT	100MF	20%	16V
C252	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C254	1-126-101-11	ELECT	100MF	20%	16V
C255	1-124-907-11	ELECT	10MF	20%	50V
C257	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C259	1-124-464-11	ELECT	0.22MF	20%	50V
C260	1-124-477-11	ELECT	47MF	20%	16V
C261	1-124-925-11	ELECT	2.2MF	20%	50V
C262	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C265	1-163-127-00	CERAMIC CHIP	270PF	5%	50V
C349	1-126-233-11	ELECT	22MF	20%	50V
C350	1-124-907-11	ELECT	10MF	20%	50V
C351	1-136-169-00	FILM	0.22MF	5%	50V
C352	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C353	1-124-907-11	ELECT	10MF	20%	50V
C354	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V

<FILTER BLOCK>

REF.NO.	PART NO.	DESCRIPTION
CM001	1-466-162-22	BLOCK, COM FILTER (CFB-4)

<TRIMMER>

REF.NO.	PART NO.	DESCRIPTION
CT101	1-141-181-11	CAP,TRIMMER
CT102	1-141-181-11	CAP,TRIMMER

<DIODE>

REF.NO.	PART NO.	DESCRIPTION
D004	8-719-400-18	DIODE MA152WK
D006	8-719-105-82	DIODE RD5.1M-B2
D010	8-719-105-XX	DIODE RD6.2M-B1
D101	8-719-400-18	DIODE MA152WK
D102	8-719-400-18	DIODE MA152WK
D103	8-719-400-18	DIODE MA152WK
D104	8-719-400-18	DIODE MA152WK
D201	8-719-900-95	DIODE V09G
D202	8-719-104-34	DIODE 1S2836
D204	8-719-400-18	DIODE MA152WK
D206	8-719-400-18	DIODE MA152WK
D207	8-719-400-18	DIODE MA152WK
D208	8-719-105-45	DIODE RD3.3M-B1
D209	8-719-105-45	DIODE RD3.3M-B1
D210	8-719-400-18	DIODE MA152WK

<DELAY LINE>

REF.NO.	PART NO.	DESCRIPTION
DL001	1-415-632-11	DELAY LINE, Y
DL101	1-415-122-31	DELAY LINE, 1H (PAL)

<IC>

REF.NO.	PART NO.	DESCRIPTION	REMARK
IC001	8-759-009-06	IC MC14052BF	
IC002	8-759-513-47	IC TDA4555/V1	
IC003	8-752-034-85	IC CXA1216P	
IC004	8-759-513-48	IC TDA2595/V9	
IC005	8-759-300-71	IC HD14053BFP	
IC006	8-759-926-18	IC SN74HC157ANS	
IC007	8-759-925-83	IC SN74HC27ANS	
IC008	8-759-604-39	IC M5F78M12L	
IC009	8-759-979-16	IC CX-7916	
IC010	1-808-891-11	MODULE SNY-9202	
IC011	8-759-100-96	IC UPC4558G2	
IC012	8-759-100-96	IC UPC4558G2	
IC013	8-759-927-46	IC SN74HC00ANS	
IC014	8-759-008-45	IC MC74HC4538F	

<COIL>

REF.NO.	PART NO.	DESCRIPTION	
L001	1-410-478-11	INDUCTOR	47UH
L101	1-404-584-11	COIL	
L102	1-404-554-11	COIL	
L103	1-404-539-11	COIL	
L104	1-404-554-11	COIL	
L105	1-404-554-11	COIL	
L106	1-410-466-41	INDUCTOR	4.7UH
L107	1-408-406-00	INDUCTOR	5.6UH
L108	1-410-478-11	INDUCTOR	47UH
L109	1-410-209-51	INDUCTOR CHIP	27UH
L201	1-459-155-00	COIL (WITH CORE)	45UH
L202	1-459-155-00	COIL (WITH CORE)	45UH

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION
Q001	8-729-230-49	TRANSISTOR 2SC2712-YG
Q002	8-729-230-46	TRANSISTOR 2SA1162-YG
Q003	8-729-230-49	TRANSISTOR 2SC2712-YG
Q004	8-729-230-49	TRANSISTOR 2SC2712-YG
Q005	8-729-230-49	TRANSISTOR 2SC2712-YG
Q006	8-729-230-49	TRANSISTOR 2SC2712-YG
Q007	8-729-230-49	TRANSISTOR 2SC2712-YG
Q008	8-729-230-49	TRANSISTOR 2SC2712-YG
Q009	8-729-230-49	TRANSISTOR 2SC2712-YG
Q010	8-729-230-49	TRANSISTOR 2SC2712-YG
Q012	8-729-901-01	TRANSISTOR DTC144EK
Q013	8-729-901-01	TRANSISTOR DTC144EK
Q014	8-729-230-49	TRANSISTOR 2SC2712-YG
Q015	8-729-230-49	TRANSISTOR 2SC2712-YG
Q016	8-729-901-01	TRANSISTOR DTC144EK
Q017	8-729-901-01	TRANSISTOR DTC144EK
Q018	8-729-900-53	TRANSISTOR DTC114EK
Q019	8-729-900-53	TRANSISTOR DTC114EK
Q020	8-729-230-49	TRANSISTOR 2SC2712-YG
Q021	8-729-230-49	TRANSISTOR 2SC2712-YG
Q023	8-729-230-49	TRANSISTOR 2SC2712-YG
Q024	8-729-901-01	TRANSISTOR DTC144EK
Q026	8-729-901-01	TRANSISTOR DTC144EK
Q027	8-729-901-01	TRANSISTOR DTC144EK
Q028	8-729-230-46	TRANSISTOR 2SA1162-YG
Q029	8-729-230-46	TRANSISTOR 2SA1162-YG
Q030	8-729-230-49	TRANSISTOR 2SC2712-YG
Q101	8-729-901-01	TRANSISTOR DTC144EK
Q102	8-729-230-49	TRANSISTOR 2SC2712-YG

REF.NO.	PAR
Q103	8-7
Q106	8-7
Q107	8-7
Q108	8-7
Q201	8-7
Q202	8-72
Q203	8-72
Q204	8-72
Q205	8-72
Q206	8-72
Q207	8-72
Q208	8-72
Q209	8-72
Q210	8-72
Q212	8-72
Q213	8-72
Q214	8-72
Q215	8-72
Q216	8-72
Q217	8-72
Q218	8-72
Q219	8-72
Q220	8-72
Q221	8-7
Q222	8-7
Q223	8-
Q224	8-
Q225	8-
Q226	8-
Q230	8-
Q231	8-
Q232	8-
Q233	8-
Q347	8-
Q348	8-
Q349	8-
Q350	8-
Q351	8
Q352	8-
Q355	8-
Q356	8-
Q357	8-
R1	1-21
R8	1-21
R11	1-21
R002	1-21
R003	1-21
R004	1-21
R006	1-21
R007	1-21
R009	1-21
R010	1-21
R012	1-21
R013	1-21
R014	1-21
R015	1-21
R016	1-21
R017	1-21
R018	1-21
R019	1-21
R020	1-21

BA

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q103	8-729-901-01	TRANSISTOR DTC144EK	
Q106	8-729-901-01	TRANSISTOR DTC144EK	
Q107	8-729-901-01	TRANSISTOR DTC144EK	
Q108	8-729-901-01	TRANSISTOR DTC144EK	
Q201	8-729-140-96	TRANSISTOR 2SD774-34	
Q202	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q203	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q204	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q205	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q206	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q207	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q208	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q209	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q210	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q212	8-729-116-06	TRANSISTOR 2SK160-K6	
Q213	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q214	8-729-116-06	TRANSISTOR 2SK160-K6	
Q215	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q216	8-729-116-06	TRANSISTOR 2SK160-K6	
Q217	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q218	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q219	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q220	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q221	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q222	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q223	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q224	8-729-901-01	TRANSISTOR DTC144EK	
Q225	8-729-901-01	TRANSISTOR DTC144EK	
Q226	8-729-901-01	TRANSISTOR DTC144EK	
Q230	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q231	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q232	8-729-116-06	TRANSISTOR 2SK160-K6	
Q233	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q347	8-729-901-01	TRANSISTOR DTC144EK	
Q348	8-729-901-01	TRANSISTOR DTC144EK	
Q349	8-729-901-01	TRANSISTOR DTC144EK	
Q350	8-729-901-01	TRANSISTOR DTC144EK	
Q351	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q352	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q355	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q356	8-729-901-01	TRANSISTOR DTC144EK	
Q357	8-729-901-01	TRANSISTOR DTC144EK	

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
R1	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R8	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R11	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R002	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R003	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R004	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R006	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R007	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R009	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R010	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R012	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R013	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R014	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R015	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R016	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R017	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R018	1-216-647-11	METAL CHIP	680	0.50%	1/10W	
R019	1-216-647-11	METAL CHIP	680	0.50%	1/10W	
R020	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R021	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R022	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R023	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R024	1-216-637-11	METAL CHIP	270	0.50%	1/10W	
R025	1-216-637-11	METAL CHIP	270	0.50%	1/10W	
R026	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R027	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R028	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R029	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R030	1-216-009-00	METAL GLAZE	22	5%	1/10W	
R031	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R032	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R033	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R034	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R035	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R036	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R037	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R038	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R039	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R040	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R041	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R048	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R049	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R050	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R051	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R052	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R053	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R054	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R055	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R060	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R061	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R062	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R063	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R064	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R065	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R066	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R067	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R068	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R069	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R070	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R071	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R101	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R102	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R103	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R104	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R105	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R106	1-216-031-00	METAL GLAZE	180	5%	1/10W	
R107	1-216-647-11	METAL CHIP	680	0.50%	1/10W	
R108	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R109	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R111	1-216-066-00	METAL GLAZE	5.1K	5%	1/10W	
R112	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R113	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R114	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R115	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R116	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R117	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R118	1-216-665-11	METAL CHIP	3.9K	0.50%	1/10W	
R119	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R120	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R122	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R123	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R124	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	

HDIH-1200M RM-1200

BA

REF.NO.	PART NO.	DESCRIPTION				REMARK
R126	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R127	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R128	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R131	1-216-681-11	METAL CHIP	18K	0.50%	1/10W	
R132	1-216-681-11	METAL CHIP	18K	0.50%	1/10W	
R140	1-216-689-11	METAL CHIP	39K	0.50%	1/10W	
R141	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R142	1-216-681-11	METAL CHIP	18K	0.50%	1/10W	
R143	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R144	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R145	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R146	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R149	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R150	1-216-681-11	METAL CHIP	18K	0.50%	1/10W	
R151	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R152	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R153	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R154	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R155	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R156	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R157	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R158	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R160	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R161	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R162	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R163	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R164	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R165	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R166	1-216-095-00	METAL GLAZE	82K	5%	1/10W	
R167	1-216-103-00	METAL GLAZE	180K	5%	1/10W	
R168	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R169	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R170	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R201	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R202	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R204	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R205	1-216-119-00	METAL GLAZE	820K	5%	1/10W	
R206	1-216-109-00	METAL GLAZE	330K	5%	1/10W	
R207	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R208	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R209	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R210	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R212	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R213	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R216	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R217	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R220	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R221	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R224	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R225	1-216-099-00	METAL GLAZE	120K	5%	1/10W	
R226	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R227	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R228	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R229	1-216-681-11	METAL CHIP	18K	0.50%	1/10W	
R230	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R231	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R232	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R233	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R234	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R235	1-216-099-00	METAL GLAZE	120K	5%	1/10W	
R236	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R237	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R238	1-216-647-11	METAL CHIP	680	0.50%	1/10W	
R239	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R240	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R241	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R242	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R243	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R244	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R245	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R246	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R247	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R248	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R249	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R250	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R251	1-216-095-00	METAL GLAZE	82K	5%	1/10W	
R252	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R253	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R254	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R255	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R256	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R257	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R258	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R259	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R260	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R261	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R262	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R263	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R264	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R265	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R266	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R267	1-216-031-00	METAL GLAZE	180	5%	1/10W	
R268	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R269	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R270	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R271	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R272	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R273	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R274	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R275	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R276	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R277	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R278	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R279	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R280	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R281	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R282	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R283	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R284	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R285	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R286	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R287	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R288	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R289	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R290	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R291	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R293	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R294	1-216-095-00	METAL GLAZE	82K	5%	1/10W	
R295	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R296	1-216-095-00	METAL GLAZE	82K	5%	1/10W	
R297	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R298	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R299	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R300	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R301	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R304	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R305	1-216-073-00	METAL GLAZE	10K	5%	1/10W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R306	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R307	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R308	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R309	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R310	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R340	1-216-693-11	METAL CHIP	56K	0.50%	1/10W	
R341	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R375	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R376	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R377	1-249-393-11	CARBON	10	5%	1/4W	
R379	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R380	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R381	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R382	1-216-095-00	METAL GLAZE	82K	5%	1/10W	
R383	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R384	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R385	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R386	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R387	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R388	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R398	1-216-017-00	METAL GLAZE	47	5%	1/10W	

<VARIABLE RESISTOR>

REF.NO.	PART NO.	DESCRIPTION
RV101	1-230-504-11	RES, ADJ, CARBON 220
RV102	1-228-993-00	RES, ADJ, CARBON 4.7K
RV202	1-228-996-00	RES, ADJ, CARBON 47K
RV203	1-228-993-00	RES, ADJ, CARBON 4.7K
RV204	1-226-775-11	RES, ADJ, METAL GLAZE 100K
RV205	1-226-775-11	RES, ADJ, METAL GLAZE 100K

<SWITCH>

REF.NO.	PART NO.	DESCRIPTION
SW101	1-570-859-11	SWITCH, SLIDE

<THERMISTER>

REF.NO.	PART NO.	DESCRIPTION
TH101	1-800-071-XX	THERMISTER

<CRYSTAL>

REF.NO.	PART NO.	DESCRIPTION
X101	1-567-413-11	VIBRATOR, CRYSTAL
X102	1-527-789-00	VINRATOR, CRYSTAL

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*A-1135-587-A BB BOARD, COMPLETE
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*1-564-595-11 PLUG, CONNECTOR 14P
*1-568-984-11 CONNECTOR, MALE 96P

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION			REMARK
C402	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C404	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C405	1-126-101-11	ELECT	100MF	20%	16V
C406	1-124-120-11	ELECT	220MF	20%	16V
C407	1-126-101-11	ELECT	100MF	20%	16V
C408	1-124-907-11	ELECT	10MF	20%	50V
C409	1-126-101-11	ELECT	100MF	20%	16V
C412	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C413	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C414	1-124-907-11	ELECT	10MF	20%	50V
C415	1-126-101-11	ELECT	100MF	20%	16V
C416	1-126-101-11	ELECT	100MF	20%	16V
C417	1-124-120-11	ELECT	220MF	20%	16V
C418	1-126-101-11	ELECT	100MF	20%	16V
C419	1-126-101-11	ELECT	100MF	20%	16V
C425	1-126-101-11	ELECT	100MF	20%	16V
C450	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C451	1-126-103-11	ELECT	470MF	20%	16V
C453	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C501	1-124-463-00	ELECT	0.1MF	20%	50V
C502	1-124-907-11	ELECT	10MF	20%	50V
C503	1-124-477-11	ELECT	47MF	20%	16V
C504	1-124-477-11	ELECT	47MF	20%	16V
C505	1-124-927-11	ELECT	4.7MF	20%	50V
C506	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C507	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C508	1-124-477-11	ELECT	47MF	20%	16V
C509	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C510	1-124-477-11	ELECT	47MF	20%	16V
C511	1-126-103-11	ELECT	470MF	20%	16V
C512	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C513	1-124-477-11	ELECT	47MF	20%	16V
C514	1-124-927-11	ELECT	4.7MF	20%	50V
C515	1-124-927-11	ELECT	4.7MF	20%	50V
C516	1-124-927-11	ELECT	4.7MF	20%	50V
C518	1-124-927-11	ELECT	4.7MF	20%	50V
C519	1-124-927-11	ELECT	4.7MF	20%	50V
C520	1-124-903-11	ELECT	1MF	20%	50V
C521	1-124-907-11	ELECT	10MF	20%	50V
C555	1-163-012-00	CERAMIC CHIP	0.0018MF	10%	50V
C556	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C557	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C650	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C651	1-124-657-00	ELECT	10MF	20%	50V
C652	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C653	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C654	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C655	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C656	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C657	1-136-169-00	FILM	0.22MF	5%	50V
C658	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C659	1-136-169-00	FILM	0.22MF	5%	50V
C660	1-124-657-00	ELECT	10MF	20%	50V
C661	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C662	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C663	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C664	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C665	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C666	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C667	1-136-169-00	FILM	0.22MF	5%	50V
C668	1-124-657-00	ELECT	10MF	20%	50V
C669	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C670	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C671	1-126-101-11	ELECT	100MF	20%	16V
C672	1-126-101-11	ELECT	100MF	20%	16V
C673	1-126-101-11	ELECT	100MF	20%	16V
C674	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C675	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C676	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C677	1-124-910-11	ELECT	47MF	20%	50V
C678	1-124-907-11	ELECT	10MF	20%	50V
C679	1-124-122-11	ELECT	100MF	20%	50V
C680	1-126-103-11	ELECT	470MF	20%	16V
C682	1-124-910-11	ELECT	47MF	20%	50V
C683	1-124-907-11	ELECT	10MF	20%	50V

BB

REF.NO.	PART NO.	DESCRIPTION			REMARK
C685	1-126-103-11	ELECT 470MF	20%	16V	
C686	1-124-122-11	ELECT 100MF	20%	50V	
C687	1-124-910-11	ELECT 47MF	20%	50V	
C688	1-124-907-11	ELECT 10MF	20%	50V	
C690	1-126-103-11	ELECT 470MF	20%	16V	
C691	1-124-122-11	ELECT 100MF	20%	50V	
C692	1-124-122-11	ELECT 100MF	20%	50V	
C693	1-124-122-11	ELECT 100MF	20%	50V	
C694	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C695	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C696	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C697	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C901	1-124-907-11	ELECT 10MF	20%	50V	
C902	1-124-903-11	ELECT 1MF	20%	50V	
C903	1-126-233-11	ELECT 22MF	20%	50V	
C904	1-163-101-00	CERAMIC CHIP 22PF	5%	50V	
C905	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C906	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C907	1-124-903-11	ELECT 1MF	20%	50V	
C908	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C909	1-124-927-11	ELECT 4.7MF	20%	50V	
C910	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C911	1-124-903-11	ELECT 1MF	20%	50V	
C912	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C913	1-163-245-11	CERAMIC CHIP 56PF	5%	50V	
C914	1-126-101-11	ELECT 100MF	20%	16V	

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
D401	8-719-900-95	DIODE V09G	
D402	8-719-900-95	DIODE V09G	
D450	8-719-400-18	DIODE MA152WK	
D451	8-719-400-18	DIODE MA152WK	
D501	8-719-400-18	DIODE MA152WK	
D502	8-719-400-18	DIODE MA152WK	
D503	8-719-400-18	DIODE MA152WK	
D504	8-719-105-82	DIODE RD5.1M-B2	
D506	8-719-105-82	DIODE RD5.1M-B2	
D507	8-719-105-82	DIODE RD5.1M-B2	
D508	8-719-105-82	DIODE RD5.1M-B2	
D509	8-719-105-82	DIODE RD5.1M-B2	
D510	8-719-105-82	DIODE RD5.1M-B2	
D511	8-719-105-82	DIODE RD5.1M-B2	
D512	8-719-105-82	DIODE RD5.1M-B2	
D513	8-719-105-82	DIODE RD5.1M-B2	
D514	8-719-105-82	DIODE RD5.1M-B2	
D515	8-719-105-82	DIODE RD5.1M-B2	
D516	8-719-106-80	DIODE RD13M-B2	
D518	8-719-106-80	DIODE RD13M-B2	
D520	8-719-105-82	DIODE RD5.1M-B2	
D521	8-719-105-82	DIODE RD5.1M-B2	
D522	8-719-106-80	DIODE RD13M-B2	
D523	8-719-106-80	DIODE RD13M-B2	
D530	8-719-105-82	DIODE RD5.1M-B2	
D652	8-719-400-18	DIODE MA152WK	
D653	8-719-400-18	DIODE MA152WK	
D901	8-719-400-18	DIODE MA152WK	
D902	8-719-400-18	DIODE MA152WK	
D903	8-719-104-34	DIODE 1S2836	
D904	8-719-400-18	DIODE MA152WK	
D905	8-719-105-XX	DIODE RD6.2M-B1	
D906	8-719-104-34	DIODE 1S2836	

<IC>

REF.NO.	PART NO.	DESCRIPTION	REMARK
IC401	8-759-800-81	IC LA7016	
IC402	8-759-604-39	IC M5F78M12L	
IC403	8-759-929-65	IC LM7912CT	
IC404	8-759-300-71	IC HD14053BFP	
IC405	8-759-926-18	IC SN74HC157ANS	
IC407	8-759-926-18	IC SN74HC157ANS	
IC408	8-759-300-71	IC HD14053BFP	
IC409	8-759-300-71	IC HD14053BFP	
IC410	8-759-100-96	IC UPC4558G2	
IC411	8-759-100-96	IC UPC4558G2	
IC412	8-759-145-27	IC UPC1406HA	
IC413	8-759-008-45	IC MC74HC4538F	
IC414	8-759-925-85	IC SN74HC32ANS	
IC415	8-749-922-85	IC BX-6475	
IC416	8-749-922-85	IC BX-6475	
IC417	8-749-922-85	IC BX-6475	

<JACK>

REF.NO.	PART NO.	DESCRIPTION	REMARK
J101	1-566-980-21	CONNECTOR, ROUND TYPE 4P	
J102	1-537-257-21	TERMINAL BOARD, INPUT/OUTPUT	
J103	1-537-255-11	TERMINAL BOARD, INPUT/OUTPUT	

<COIL>

REF.NO.	PART NO.	DESCRIPTION	REMARK
L401	1-459-155-00	COIL (WITH CORE) 45UH	
L402	1-459-155-00	COIL (WITH CORE) 45UH	
L403	1-459-155-00	COIL (WITH CORE) 45UH	
L404	1-459-155-00	COIL (WITH CORE) 45UH	
L405	1-410-671-31	INDUCTOR 47UH	
L650	1-410-482-31	INDUCTOR 100UH	
L651	1-410-482-31	INDUCTOR 100UH	

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q401	8-729-140-96	TRANSISTOR 2SD774-34	
Q402	8-729-140-97	TRANSISTOR 2SB734-34	
Q450	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q451	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q452	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q453	8-729-901-00	TRANSISTOR DTC124EK	
Q454	8-729-901-00	TRANSISTOR DTC124EK	
Q456	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q457	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q501	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q502	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q503	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q504	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q505	8-729-901-01	TRANSISTOR DTC144EK	
Q506	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q507	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q508	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q509	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q510	8-729-901-01	TRANSISTOR DTC144EK	
Q511	8-729-901-01	TRANSISTOR DTC144EK	
Q512	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q513	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q514	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q515	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q516	8-729-112-65	TRANSISTOR 2SA1462-Y33	

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q517	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q518	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q519	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q520	8-729-901-00	TRANSISTOR DTC124EK	
Q521	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q522	8-729-901-01	TRANSISTOR DTC144EK	
Q523	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q524	8-729-901-01	TRANSISTOR DTC144EK	
Q525	8-729-901-01	TRANSISTOR DTC144EK	
Q526	8-729-901-01	TRANSISTOR DTC144EK	
Q527	8-729-901-01	TRANSISTOR DTC144EK	
Q528	8-729-901-01	TRANSISTOR DTC144EK	
Q529	8-729-901-01	TRANSISTOR DTC144EK	
Q530	8-729-901-01	TRANSISTOR DTC144EK	
Q531	8-729-901-01	TRANSISTOR DTC144EK	
Q537	8-729-901-01	TRANSISTOR DTC144EK	
Q538	8-729-901-01	TRANSISTOR DTC144EK	
Q539	8-729-901-01	TRANSISTOR DTC144EK	
Q540	8-729-901-01	TRANSISTOR DTC144EK	
Q541	8-729-320-62	TRANSISTOR 2SD789-34	
Q542	8-729-901-01	TRANSISTOR DTC144EK	
Q650	8-729-902-96	TRANSISTOR FMS1	
Q651	8-729-902-96	TRANSISTOR FMS1	
Q652	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q653	8-729-901-00	TRANSISTOR DTC124EK	
Q654	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q655	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q656	8-729-901-00	TRANSISTOR DTC124EK	
Q657	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q658	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q659	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q660	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q661	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q662	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q663	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q664	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q665	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q666	8-729-116-06	TRANSISTOR 2SK160-K6	
Q667	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q668	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q669	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q670	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q671	8-729-901-00	TRANSISTOR DTC124EK	
Q672	8-729-901-00	TRANSISTOR DTC124EK	
Q673	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q674	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q675	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q676	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q677	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q678	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q679	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q680	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q681	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q687	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q688	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q689	8-729-901-00	TRANSISTOR DTC124EK	
Q690	8-729-901-00	TRANSISTOR DTC124EK	
Q691	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q692	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q693	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q694	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q695	8-729-107-31	TRANSISTOR 2SC3545-T43	

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q696	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q697	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q698	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q699	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q706	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q707	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q708	8-729-901-00	TRANSISTOR DTC124EK	
Q709	8-729-901-00	TRANSISTOR DTC124EK	
Q710	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q711	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q712	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q713	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q714	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q715	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q716	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q717	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q718	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q724	8-729-116-06	TRANSISTOR 2SK160-K6	
Q725	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q726	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q727	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q728	8-729-923-06	TRANSISTOR FMW-8	
Q729	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q730	8-729-923-06	TRANSISTOR FMW-8	
Q731	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q732	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q733	8-729-901-00	TRANSISTOR DTC124EK	
Q734	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q735	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q736	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q737	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q738	8-729-116-06	TRANSISTOR 2SK160-K6	
Q739	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q740	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q901	8-729-903-10	TRANSISTOR FMW1	
Q902	8-729-903-10	TRANSISTOR FMW1	
Q903	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q904	8-729-901-00	TRANSISTOR DTC124EK	
Q905	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q906	8-729-162-13	TRANSISTOR 2SC1621-B3	
Q907	8-729-902-96	TRANSISTOR FMS1	
Q908	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q909	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q910	8-729-902-96	TRANSISTOR FMS1	
Q911	8-729-162-13	TRANSISTOR 2SC1621-B3	
Q912	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q913	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q914	8-729-230-46	TRANSISTOR 2SA1162-YG	
Q915	8-729-902-96	TRANSISTOR FMS1	
Q916	8-729-904-04	TRANSISTOR FMS2	
Q918	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q919	8-729-903-10	TRANSISTOR FMW1	
Q920	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q921	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q922	8-729-902-96	TRANSISTOR FMS1	
Q924	8-729-230-49	TRANSISTOR 2SC2712-YG	

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
R401	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R403	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R450	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R451	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R452	1-216-037-00	METAL GLAZE	330	5%	1/10W	

BB

REF.NO.	PART NO.	DESCRIPTION				REMARK
R453	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R454	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R455	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R456	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R459	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R460	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R461	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R462	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R463	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R464	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R466	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R467	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R468	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R469	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R470	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R471	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R472	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R473	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R474	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R501	1-216-624-11	METAL CHIP	75	0.50%	1/10W	
R502	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R503	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R504	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R505	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R506	1-216-624-11	METAL CHIP	75	0.50%	1/10W	
R507	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R508	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R509	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R510	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R511	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R512	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R513	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R514	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R515	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R516	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R517	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R518	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R519	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R520	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R521	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R522	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R523	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R524	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R525	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R526	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R527	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R528	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R529	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R530	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R531	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R532	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R533	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R534	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R535	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R536	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R537	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R538	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R539	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R540	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R541	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R542	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R543	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R544	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R545	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R546	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R547	1-216-631-11	METAL CHIP	150	0.50%	1/10W	
R548	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R549	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R550	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R551	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R552	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R553	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R554	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R555	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R556	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R557	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R558	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R559	1-216-631-11	METAL CHIP	150	0.50%	1/10W	
R560	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R561	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R562	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R563	1-216-637-11	METAL CHIP	270	0.50%	1/10W	
R564	1-216-645-11	METAL CHIP	560	0.50%	1/10W	
R565	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R566	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R567	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R568	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R569	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R570	1-216-624-11	METAL CHIP	75	0.50%	1/10W	
R571	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R572	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R573	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R574	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R575	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R576	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R577	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R578	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R579	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R580	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R581	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R584	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R585	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R586	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R587	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R588	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R589	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R590	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R591	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R592	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R593	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R594	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R595	1-216-693-11	METAL CHIP	56K	0.50%	1/10W	
R596	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R597	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R598	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R599	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R600	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R601	1-216-631-11	METAL CHIP	150	0.50%	1/10W	
R602	1-216-631-11	METAL CHIP	150	0.50%	1/10W	
R603	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R604	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R605	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R606	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R607	1-216-117-00	METAL GLAZE	680K	5%	1/10W	
R608	1-216-099-00	METAL GLAZE	120K	5%	1/10W	
R609	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R610	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R650	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	

BB

REF.NO.	PART NO.	DESCRIPTION			
R651	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W
R652	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R653	1-216-025-00	METAL GLAZE	100	5%	1/10W
R654	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W
R655	1-216-643-11	METAL CHIP	470	0.50%	1/10W
R656	1-216-025-00	METAL GLAZE	100	5%	1/10W
R657	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W
R658	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R659	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W
R660	1-216-631-11	METAL CHIP	150	0.50%	1/10W
R661	1-216-631-11	METAL CHIP	150	0.50%	1/10W
R662	1-216-295-00	METAL GLAZE	0	5%	1/10W
R663	1-216-629-11	METAL CHIP	120	0.50%	1/10W
R664	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W
R665	1-216-013-00	METAL GLAZE	33	5%	1/10W
R666	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R667	1-216-645-11	METAL CHIP	560	0.50%	1/10W
R668	1-216-033-00	METAL GLAZE	220	5%	1/10W
R669	1-216-017-00	METAL GLAZE	47	5%	1/10W
R670	1-216-647-11	METAL CHIP	680	0.50%	1/10W
R671	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R672	1-216-631-11	METAL CHIP	150	0.50%	1/10W
R673	1-216-017-00	METAL GLAZE	47	5%	1/10W
R674	1-216-647-11	METAL CHIP	680	0.50%	1/10W
R675	1-216-017-00	METAL GLAZE	47	5%	1/10W
R676	1-216-647-11	METAL CHIP	680	0.50%	1/10W
R677	1-216-631-11	METAL CHIP	150	0.50%	1/10W
R678	1-216-017-00	METAL GLAZE	47	5%	1/10W
R679	1-216-647-11	METAL CHIP	680	0.50%	1/10W
R680	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R681	1-216-017-00	METAL GLAZE	47	5%	1/10W
R682	1-216-647-11	METAL CHIP	680	0.50%	1/10W
R683	1-216-643-11	METAL CHIP	470	0.50%	1/10W
R684	1-216-017-00	METAL GLAZE	47	5%	1/10W
R685	1-216-647-11	METAL CHIP	680	0.50%	1/10W
R686	1-216-025-00	METAL GLAZE	100	5%	1/10W
R687	1-216-624-11	METAL CHIP	75	0.50%	1/10W
R688	1-216-025-00	METAL GLAZE	100	5%	1/10W
R689	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R690	1-216-121-00	METAL GLAZE	1M	5%	1/10W
R691	1-216-627-11	METAL CHIP	100	0.50%	1/10W
R692	1-216-627-11	METAL CHIP	100	0.50%	1/10W
R693	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W
R694	1-216-025-00	METAL GLAZE	100	5%	1/10W
R695	1-216-025-00	METAL GLAZE	100	5%	1/10W
R696	1-216-047-00	METAL GLAZE	820	5%	1/10W
R697	1-216-047-00	METAL GLAZE	820	5%	1/10W
R698	1-216-025-00	METAL GLAZE	100	5%	1/10W
R699	1-216-025-00	METAL GLAZE	100	5%	1/10W
R701	1-216-025-00	METAL GLAZE	100	5%	1/10W
R702	1-216-025-00	METAL GLAZE	100	5%	1/10W
R703	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R704	1-216-037-00	METAL GLAZE	330	5%	1/10W
R705	1-216-025-00	METAL GLAZE	100	5%	1/10W
R706	1-216-017-00	METAL GLAZE	47	5%	1/10W
R707	1-216-647-11	METAL CHIP	680	0.50%	1/10W
R708	1-216-025-00	METAL GLAZE	100	5%	1/10W
R709	1-216-645-11	METAL CHIP	560	0.50%	1/10W
R710	1-216-645-11	METAL CHIP	560	0.50%	1/10W
R711	1-216-643-11	METAL CHIP	470	0.50%	1/10W
R713	1-216-017-00	METAL GLAZE	47	5%	1/10W
R714	1-216-647-11	METAL CHIP	680	0.50%	1/10W
R715	1-216-647-11	METAL CHIP	680	0.50%	1/10W
R720	1-216-627-11	METAL CHIP	100	0.50%	1/10W
R728	1-216-624-11	METAL CHIP	75	0.50%	1/10W
R729	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R730	1-216-683-11	METAL CHIP	22K	0.50%	1/10W
R731	1-216-683-11	METAL CHIP	22K	0.50%	1/10W
R732	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R733	1-216-025-00	METAL GLAZE	100	5%	1/10W
R734	1-216-624-11	METAL CHIP	75	0.50%	1/10W
R735	1-216-627-11	METAL CHIP	100	0.50%	1/10W
R736	1-216-627-11	METAL CHIP	100	0.50%	1/10W
R737	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R738	1-216-025-00	METAL GLAZE	100	5%	1/10W
R739	1-216-017-00	METAL GLAZE	47	5%	1/10W
R740	1-216-025-00	METAL GLAZE	100	5%	1/10W
R741	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R742	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R743	1-216-025-00	METAL GLAZE	100	5%	1/10W
R744	1-216-017-00	METAL GLAZE	47	5%	1/10W
R745	1-216-627-11	METAL CHIP	100	0.50%	1/10W
R746	1-216-625-11	METAL CHIP	82	0.50%	1/10W
R747	1-216-025-00	METAL GLAZE	100	5%	1/10W
R748	1-216-665-11	METAL CHIP	3.9K	0.50%	1/10W
R749	1-216-627-11	METAL CHIP	100	0.50%	1/10W
R750	1-216-629-11	METAL CHIP	120	0.50%	1/10W
R751	1-216-047-00	METAL GLAZE	820	5%	1/10W
R752	1-216-025-00	METAL GLAZE	100	5%	1/10W
R753	1-216-025-00	METAL GLAZE	100	5%	1/10W
R754	1-216-047-00	METAL GLAZE	820	5%	1/10W
R755	1-216-025-00	METAL GLAZE	100	5%	1/10W
R756	1-216-025-00	METAL GLAZE	100	5%	1/10W
R757	1-216-025-00	METAL GLAZE	100	5%	1/10W
R758	1-216-025-00	METAL GLAZE	100	5%	1/10W
R759	1-216-025-00	METAL GLAZE	100	5%	1/10W
R760	1-216-647-11	METAL CHIP	680	0.50%	1/10W
R761	1-216-645-11	METAL CHIP	560	0.50%	1/10W
R762	1-216-645-11	METAL CHIP	560	0.50%	1/10W
R763	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R764	1-216-025-00	METAL GLAZE	100	5%	1/10W
R765	1-216-037-00	METAL GLAZE	330	5%	1/10W
R766	1-216-025-00	METAL GLAZE	100	5%	1/10W
R767	1-216-017-00	METAL GLAZE	47	5%	1/10W
R768	1-216-643-11	METAL CHIP	470	0.50%	1/10W
R770	1-216-017-00	METAL GLAZE	47	5%	1/10W
R771	1-216-647-11	METAL CHIP	680	0.50%	1/10W
R772	1-216-647-11	METAL CHIP	680	0.50%	1/10W
R783	1-216-624-11	METAL CHIP	75	0.50%	1/10W
R785	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R786	1-216-683-11	METAL CHIP	22K	0.50%	1/10W
R787	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R788	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R789	1-216-624-11	METAL CHIP	75	0.50%	1/10W
R790	1-216-025-00	METAL GLAZE	100	5%	1/10W
R791	1-216-643-11	METAL CHIP	470	0.50%	1/10W
R792	1-216-121-00	METAL GLAZE	1M	5%	1/10W
R793	1-216-627-11	METAL CHIP	100	0.50%	1/10W
R794	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W
R795	1-216-627-11	METAL CHIP	100	0.50%	1/10W
R796	1-216-665-11	METAL CHIP	3.9K	0.50%	1/10W
R797	1-216-643-11	METAL CHIP	470	0.50%	1/10W
R798	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W
R799	1-216-025-00	METAL GLAZE	100	5%	1/10W
R801	1-216-047-00	METAL GLAZE	820	5%	1/10W
R802	1-216-025-00	METAL GLAZE	100	5%	1/10W
R803	1-216-047-00	METAL GLAZE	820	5%	1/10W

BB CA(B)

REF.NO.	PART NO.	DESCRIPTION				REMARK
R804	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R805	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R806	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R807	1-216-647-11	METAL CHIP	680	0.50%	1/10W	
R808	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R809	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R810	1-216-645-11	METAL CHIP	560	0.50%	1/10W	
R811	1-216-645-11	METAL CHIP	560	0.50%	1/10W	
R812	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R813	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R814	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R815	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R816	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R817	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R819	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R820	1-216-647-11	METAL CHIP	680	0.50%	1/10W	
R821	1-216-647-11	METAL CHIP	680	0.50%	1/10W	
R829	1-216-624-11	METAL CHIP	75	0.50%	1/10W	
R830	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R832	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R836	1-216-631-11	METAL CHIP	150	0.50%	1/10W	
R837	1-216-631-11	METAL CHIP	150	0.50%	1/10W	
R901	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R902	1-216-665-11	METAL CHIP	3.9K	0.50%	1/10W	
R903	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R904	1-216-647-11	METAL CHIP	680	0.50%	1/10W	
R905	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R906	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R907	1-216-647-11	METAL CHIP	680	0.50%	1/10W	
R908	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R909	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R910	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R911	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R912	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R913	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R914	1-216-647-11	METAL CHIP	680	0.50%	1/10W	
R915	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R917	1-216-687-11	METAL CHIP	33K	0.50%	1/10W	
R918	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R919	1-216-685-11	METAL CHIP	27K	0.50%	1/10W	
R920	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R921	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R922	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R923	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R924	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R925	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R926	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R927	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R928	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R929	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R930	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R931	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R932	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R933	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R934	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R935	1-216-095-00	METAL GLAZE	82K	5%	1/10W	
R936	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R937	1-216-031-00	METAL GLAZE	180	5%	1/10W	
R938	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R939	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R940	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R941	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R942	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R943	1-216-645-11	METAL CHIP	560	0.50%	1/10W	
R944	1-216-665-11	METAL CHIP	3.9K	0.50%	1/10W	
R945	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R950	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R961	1-216-025-00	METAL GLAZE	100	5%	1/10W	

<RELAY>

REF.NO.	PART NO.	DESCRIPTION
RL401	1-515-757-11	RELAY
RL402	1-515-757-11	RELAY
RL403	1-515-757-11	RELAY

<VARIABLE RESISTOR>

REF.NO.	PART NO.	DESCRIPTION
RV901	1-228-994-00	RES, ADJ, CARBON 10K

<SWITCH>

REF.NO.	PART NO.	DESCRIPTION
SW1	1-570-859-11	SWITCH, SLIDE

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*A-1335-014-A CA(B) BOARD, COMPLETE
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*1-526-575-00 SOCKET, PLUG 1P
1-564-507-11 PLUG, CONNECTOR 4P
*1-564-516-11 PLUG, CONNECTOR 13P

<CPACITOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
C30	1-126-101-11	ELECT	100MF	20%	16V	
C31	1-126-101-11	ELECT	100MF	20%	16V	
C32	1-126-233-11	ELECT	22MF	20%	50V	
C33	1-126-233-11	ELECT	22MF	20%	50V	
C34	1-101-004-00	CERAMIC	0.01MF		50V	
C35	1-124-927-11	ELECT	4.7MF	20%	50V	
C36	1-126-101-11	ELECT	100MF	20%	16V	
C37	1-126-233-11	ELECT	22MF	20%	50V	
C38	1-101-004-00	CERAMIC	0.01MF		50V	
C39	1-102-978-00	CERAMIC	220PF	5%	50V	
C40	1-102-978-00	CERAMIC	220PF	5%	50V	
C41	1-102-973-00	CERAMIC	100PF	5%	50V	
C42	1-162-117-00	CERAMIC	100PF	10%	500V	
C43	1-101-004-00	CERAMIC	0.01MF		50V	
C44	1-126-233-11	ELECT	22MF	20%	50V	
C45	1-101-004-00	CERAMIC	0.01MF		50V	
C46	1-126-233-11	ELECT	22MF	20%	50V	
C47	1-126-134-11	ELECT	4.7MF	20%	350V	
C48	1-123-932-00	ELECT	4.7MF	20%	160V	
C49	1-124-798-11	ELECT	1MF	20%	160V	
C50	1-124-798-11	ELECT	1MF	20%	160V	
C51	1-102-050-00	CERAMIC	0.01MF	99%	500V	
C52	1-102-050-00	CERAMIC	0.01MF	99%	500V	
C53	1-124-903-11	ELECT	1MF	20%	50V	
C301	1-124-282-00	ELECT	22MF	20%	16V	
C302	1-124-910-11	ELECT	47MF	20%	50V	
C303	1-126-101-11	ELECT	100MF	20%	16V	
C304	1-126-101-11	ELECT	100MF	20%	16V	
C305	1-126-233-11	ELECT	22MF	20%	50V	
C306	1-102-973-00	CERAMIC	100PF	5%	50V	
C307	1-102-976-00	CERAMIC	180PF	5%	50V	
C308	1-124-799-11	ELECT	2.2MF	20%	160V	
C309	1-124-799-11	ELECT	2.2MF	20%	160V	
C310	1-124-634-11	ELECT	1MF	20%	250V	
C311	1-126-233-11	ELECT	22MF	20%	50V	

REF.NO.	PART NO.	DESCRIPTION				REMARK
C312	1-136-165-00	FILM	0.1MF	5%	50V	
C313	1-136-165-00	FILM	0.1MF	5%	50V	
C314	1-126-174-51	ELECT	10MF	20%	350V	
C315	1-102-038-00	CERAMIC	0.001MF		500V	
C316	1-102-050-00	CERAMIC	0.01MF	99%	500V	
C317	1-124-768-11	ELECT	4.7MF	20%	50V	
C318	1-101-004-00	CERAMIC	0.01MF		50V	
C319	1-136-165-00	FILM	0.1MF	5%	50V	
C320	1-124-903-11	ELECT	1MF	20%	50V	
C321	1-126-233-11	ELECT	22MF	20%	50V	
C322	1-126-233-11	ELECT	22MF	20%	50V	
C323	1-126-233-11	ELECT	22MF	20%	50V	
C324	1-102-973-00	CERAMIC	100PF	5%	50V	
C327	1-101-004-00	CERAMIC	0.01MF		50V	
C350	1-126-101-11	ELECT	100MF	20%	16V	
C351	1-126-101-11	ELECT	100MF	20%	16V	

<DIODE>

REF.NO.	PART NO.	DESCRIPTION
D30	8-719-911-19	DIODE 1SS119
D31	8-719-901-83	DIODE 1SS83
D32	8-719-901-83	DIODE 1SS83
D33	8-719-911-19	DIODE 1SS119
D34	8-719-911-19	DIODE 1SS119
D35	8-719-900-95	DIODE V09G
D36	8-719-900-95	DIODE V09G
D37	8-719-971-20	DIODE ERC38-06
D38	8-719-110-31	DIODE RD12ESB2
D39	8-719-901-83	DIODE 1SS83
D301	8-719-901-83	DIODE 1SS83
D303	8-719-109-51	DIODE RD2.0ESB2
D304	8-719-911-19	DIODE 1SS119
D305	8-719-901-83	DIODE 1SS83
D306	8-719-911-19	DIODE 1SS119
D307	8-719-911-19	DIODE 1SS119
D309	8-719-911-19	DIODE 1SS119
D310	8-719-109-51	DIODE RD2.0ESB2
D311	8-719-911-19	DIODE 1SS119
D312	8-719-911-19	DIODE 1SS119
D313	8-719-911-19	DIODE 1SS119
D314	8-719-110-36	DIODE RD13ESB2
D315	8-719-109-66	DIODE RD3.3ESB2
D316	8-719-911-19	DIODE 1SS119

<IC>

REF.NO.	PART NO.	DESCRIPTION
IC301	8-749-922-43	IC VPH05A
IC302	8-759-990-82	IC TL082CP
IC303	8-749-920-88	IC SNY-8C02
IC304	8-749-923-15	IC TY885002A
IC305	8-749-921-91	IC TY885003A

<COIL>

REF.NO.	PART NO.	DESCRIPTION	
L301	1-408-880-00	INDUCTOR	0.68UH

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION
Q30	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q31	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q32	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q33	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q34	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q35	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q36	8-729-820-82	TRANSISTOR 2SA1208-S
Q37	8-729-820-82	TRANSISTOR 2SA1208-S
Q38	8-729-255-12	TRANSISTOR 2SC2551-O
Q39	8-729-255-12	TRANSISTOR 2SC2551-O
Q40	8-729-820-82	TRANSISTOR 2SA1208-S
Q41	8-729-903-68	TRANSISTOR 2SD982
Q42	8-729-801-88	TRANSISTOR 2SA1381-E
Q43	8-729-900-63	TRANSISTOR DTA124ES
Q301	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q302	8-729-140-50	TRANSISTOR 2SC3209LK
Q303	8-729-801-88	TRANSISTOR 2SA1381-E
Q304	8-729-801-88	TRANSISTOR 2SA1381-E
Q305	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q306	8-729-140-50	TRANSISTOR 2SC3209LK
Q307	8-729-801-88	TRANSISTOR 2SA1381-E
Q308	8-729-900-36	TRANSISTOR DTC124ES
Q309	8-729-900-36	TRANSISTOR DTC124ES
Q310	8-729-900-63	TRANSISTOR DTA124ES
Q311	8-729-105-74	TRANSISTOR 2SK523-M1
Q312	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q313	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q314	8-729-900-63	TRANSISTOR DTA124ES

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
R50	1-249-421-11	CARBON	2.2K	5%	1/4W	
R51	1-249-427-11	CARBON	6.8K	5%	1/4W	
R52	1-249-393-11	CARBON	10	5%	1/4W	
R53	1-249-427-11	CARBON	6.8K	5%	1/4W	
R54	1-215-437-00	METAL	4.7K	1%	1/4W	
R55	1-215-439-00	METAL	5.6K	1%	1/4W	
R56	1-215-467-00	METAL	82K	1%	1/4W	
R57	1-249-405-11	CARBON	100	5%	1/4W	
R58	1-249-441-11	CARBON	100K	5%	1/4W	
R59	1-249-429-11	CARBON	10K	5%	1/4W	
R60	1-249-425-11	CARBON	4.7K	5%	1/4W	
R61	1-249-429-11	CARBON	10K	5%	1/4W	
R62	1-249-429-11	CARBON	10K	5%	1/4W	
R63	1-249-421-11	CARBON	2.2K	5%	1/4W	
R64	1-249-425-11	CARBON	4.7K	5%	1/4W	
R65	1-249-425-11	CARBON	4.7K	5%	1/4W	
R66	1-249-417-11	CARBON	1K	5%	1/4W	F
R67	1-249-403-11	CARBON	68	5%	1/4W	
R68	1-249-397-11	CARBON	22	5%	1/4W	F
R69	1-249-397-11	CARBON	22	5%	1/4W	F
R70	1-249-399-11	CARBON	33	5%	1/4W	
R71	1-249-399-11	CARBON	33	5%	1/4W	
R72	1-249-397-11	CARBON	22	5%	1/4W	F
R73	1-249-403-11	CARBON	68	5%	1/4W	
R74	1-249-429-11	CARBON	10K	5%	1/4W	F
R75	1-249-429-11	CARBON	10K	5%	1/4W	F
R76	1-202-719-00	SOLID	1M	10%	1/2W	
R77	1-247-903-00	CARBON	1M	5%	1/4W	
R78	1-249-441-11	CARBON	100K	5%	1/4W	
R301	1-215-401-11	METAL	150	1%	1/4W	
R302	1-215-401-11	METAL	150	1%	1/4W	
R303	1-215-461-00	METAL	47K	1%	1/4W	
R304	1-215-469-00	METAL	100K	1%	1/4W	
R305	1-215-469-00	METAL	100K	1%	1/4W	
R306	1-215-473-00	METAL	150K	1%	1/4W	
R307	1-249-421-11	CARBON	2.2K	5%	1/4W	
R308	1-249-403-11	CARBON	68	5%	1/4W	
R309	1-215-429-00	METAL	2.2K	1%	1/4W	
R311	1-249-421-11	CARBON	2.2K	5%	1/4W	
R312	1-215-383-00	METAL	27	1%	1/4W	

CA(B) CA(RG)

REF.NO.	PART NO.	DESCRIPTION				REMARK
R316	1-215-473-00	METAL	150K	1%	1/4W	
R317	1-249-421-11	CARBON	2.2K	5%	1/4W	
R318	1-249-427-11	CARBON	6.8K	5%	1/4W	
R319	1-215-453-00	METAL	22K	1%	1/4W	
R320	1-215-469-00	METAL	100K	1%	1/4W	
R321	1-215-471-00	METAL	120K	1%	1/4W	
R322	1-215-441-00	METAL	6.8K	1%	1/4W	
R323	1-215-481-00	METAL	330K	1%	1/4W	
R324	1-215-433-00	METAL	3.3K	1%	1/4W	
R325	1-249-431-11	CARBON	15K	5%	1/4W	
R326	1-249-431-11	CARBON	15K	5%	1/4W	
R327	1-249-415-11	CARBON	680	5%	1/4W	
R328	1-249-405-11	CARBON	100	5%	1/4W	
R329	1-249-409-11	CARBON	220	5%	1/4W	F
R330	1-215-431-00	METAL	2.7K	1%	1/4W	
R331	1-202-549-00	SOLID	100	5%	1/2W	
R332	1-202-818-00	SOLID	1K	10%	1/2W	
R333	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R334	1-215-469-00	METAL	100K	1%	1/4W	
R335	1-249-429-11	CARBON	10K	5%	1/4W	
R336	1-202-549-00	SOLID	100	5%	1/2W	
R337	1-215-443-00	METAL	8.2K	1%	1/4W	
R338	1-215-435-00	METAL	3.9K	1%	1/4W	
R339	1-249-421-11	CARBON	2.2K	5%	1/4W	
R340	1-215-453-00	METAL	22K	1%	1/4W	
R341	1-215-421-00	METAL	1K	1%	1/4W	
R342	1-249-417-11	CARBON	1K	5%	1/4W	
R343	1-247-903-00	CARBON	1M	5%	1/4W	
R344	1-249-427-11	CARBON	6.8K	5%	1/4W	
R345	1-249-405-11	CARBON	100	5%	1/4W	
R346	1-247-895-00	CARBON	470K	5%	1/4W	
R347	1-249-405-11	CARBON	100	5%	1/4W	
R348	1-247-903-00	CARBON	1M	5%	1/4W	
R349	1-249-423-11	CARBON	3.3K	5%	1/4W	
R351	1-215-447-00	METAL	12K	1%	1/4W	
R352	1-249-421-11	CARBON	2.2K	5%	1/4W	
R353	1-249-403-11	CARBON	68	5%	1/4W	F
R356	1-215-461-00	METAL	47K	1%	1/4W	

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*A-1335-015-A CA(RG) BOARD, COMPLETE
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PART NO.	DESCRIPTION
*1-526-575-00	SOCKET, PLUG 1P
1-564-507-11	PLUG, CONNECTOR 4P
*1-564-514-11	PLUG, CONNECTOR 11P
*1-564-515-11	PLUG, CONNECTOR 12P
*1-564-516-11	PLUG, CONNECTOR 13P
*1-568-979-11	CONNECTOR 30P
*4-363-404-00	HOLDER, IC
4-391-519-01	SHEET (E), INSULATOR

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
C1	1-124-907-11	ELECT	10MF	20%	50V	
C2	1-126-101-11	ELECT	100MF	20%	16V	
C3	1-124-907-11	ELECT	10MF	20%	50V	
C4	1-126-101-11	ELECT	100MF	20%	16V	
C5	1-126-233-11	ELECT	22MF	20%	50V	
C6	1-126-101-11	ELECT	100MF	20%	16V	
C7	1-126-233-11	ELECT	22MF	20%	50V	
C8	1-102-820-00	CERAMIC	330PF	5%	50V	
C9	1-101-880-00	CERAMIC	47PF	5%	50V	
C10	1-101-004-00	CERAMIC	0.01MF		50V	
C11	1-101-004-00	CERAMIC	0.01MF		50V	
C12	1-101-004-00	CERAMIC	0.01MF		50V	
C13	1-101-004-00	CERAMIC	0.01MF		50V	
C14	1-126-233-11	ELECT	22MF	20%	50V	
C15	1-102-963-00	CERAMIC	33PF	5%	50V	
C16	1-126-233-11	ELECT	22MF	20%	50V	
C17	1-136-165-00	FILM	0.1MF	5%	50V	
C18	1-136-165-00	FILM	0.1MF	5%	50V	
C19	1-136-165-00	FILM	0.1MF	5%	50V	
C20	1-136-165-00	FILM	0.1MF	5%	50V	
C21	1-126-233-11	ELECT	22MF	20%	50V	
C22	1-126-103-11	ELECT	470MF	20%	16V	
C23	1-136-171-00	FILM	0.33MF	5%	50V	
C101	1-124-282-00	ELECT	22MF	20%	16V	
C102	1-124-477-11	ELECT	47MF	20%	16V	
C103	1-126-101-11	ELECT	100MF	20%	16V	
C104	1-126-101-11	ELECT	100MF	20%	16V	
C105	1-126-233-11	ELECT	22MF	20%	50V	
C106	1-102-973-00	CERAMIC	100PF	5%	50V	
C107	1-102-976-00	CERAMIC	180PF	5%	50V	
C108	1-124-799-11	ELECT	2.2MF	20%	160V	
C109	1-124-799-11	ELECT	2.2MF	20%	160V	
C110	1-124-634-11	ELECT	1MF	20%	250V	
C111	1-126-233-11	ELECT	22MF	20%	50V	
C112	1-136-165-00	FILM	0.1MF	5%	50V	
C113	1-136-165-00	FILM	0.1MF	5%	50V	
C114	1-126-174-51	ELECT	10MF	20%	350V	
C115	1-102-038-00	CERAMIC	0.001MF		500V	
C116	1-102-050-00	CERAMIC	0.01MF	99%	500V	
C117	1-124-768-11	ELECT	4.7MF	20%	50V	
C118	1-101-004-00	CERAMIC	0.01MF		50V	
C119	1-136-165-00	FILM	0.1MF	5%	50V	
C120	1-124-903-11	ELECT	1MF	20%	50V	
C121	1-126-233-11	ELECT	22MF	20%	50V	
C122	1-126-233-11	ELECT	22MF	20%	50V	
C123	1-126-233-11	ELECT	22MF	20%	50V	
C127	1-101-004-00	CERAMIC	0.01MF		50V	
C201	1-124-282-00	ELECT	22MF	20%	16V	
C202	1-126-233-11	ELECT	22MF	20%	50V	
C203	1-126-101-11	ELECT	100MF	20%	16V	
C204	1-126-101-11	ELECT	100MF	20%	16V	
C205	1-126-233-11	ELECT	22MF	20%	50V	
C206	1-102-973-00	CERAMIC	100PF	5%	50V	
C207	1-102-976-00	CERAMIC	180PF	5%	50V	
C208	1-124-799-11	ELECT	2.2MF	20%	160V	
C209	1-124-799-11	ELECT	2.2MF	20%	160V	
C210	1-124-634-11	ELECT	1MF	20%	250V	
C211	1-126-233-11	ELECT	22MF	20%	50V	
C212	1-136-165-00	FILM	0.1MF	5%	50V	
C213	1-136-165-00	FILM	0.1MF	5%	50V	
C214	1-126-174-51	ELECT	10MF	20%	350V	
C215	1-102-038-00	CERAMIC	0.001MF		500V	
C216	1-102-050-00	CERAMIC	0.01MF	99%	500V	
C217	1-124-768-11	ELECT	4.7MF	20%	50V	
C218	1-101-004-00	CERAMIC	0.01MF		50V	
C219	1-136-165-00	FILM	0.1MF	5%	50V	
C220	1-124-903-11	ELECT	1MF	20%	50V	
C221	1-126-233-11	ELECT	22MF	20%	50V	
C222	1-126-233-11	ELECT	22MF	20%	50V	
C223	1-126-233-11	ELECT	22MF	20%	50V	
C227	1-101-004-00	CERAMIC	0.01MF		50V	

REF.NO.	PART NO.	DESCRIPTION		REMARK
		<DIODE>		
D1	8-719-900-95	DIODE V09G		
D2	8-719-900-95	DIODE V09G		
D3	8-719-109-89	DIODE RD5.6ESB2		
D4	8-719-911-19	DIODE 1SS119		
D5	8-719-911-19	DIODE 1SS119		
D6	8-719-911-19	DIODE 1SS119		
D7	8-719-911-19	DIODE 1SS119		
D8	8-719-911-19	DIODE 1SS119		
D9	8-719-109-93	DIODE RD6.2ESB2		
D11	8-719-948-45	DIODE ERA22-08		
D12	8-719-911-19	DIODE 1SS119		
D13	8-719-109-85	DIODE RD5.1ESB2		
D101	8-719-901-83	DIODE 1SS83		
D103	8-719-109-51	DIODE RD2.0ESB2		
D104	8-719-911-19	DIODE 1SS119		
D105	8-719-901-83	DIODE 1SS83		
D106	8-719-911-19	DIODE 1SS119		
D107	8-719-911-19	DIODE 1SS119		
D109	8-719-911-19	DIODE 1SS119		
D110	8-719-109-51	DIODE RD2.0ESB2		
D111	8-719-911-19	DIODE 1SS119		
D112	8-719-911-19	DIODE 1SS119		
D113	8-719-911-19	DIODE 1SS119		
D114	8-719-110-36	DIODE RD13ESB2		
D115	8-719-911-19	DIODE 1SS119		
D201	8-719-901-83	DIODE 1SS83		
D203	8-719-109-51	DIODE RD2.0ESB2		
D204	8-719-911-19	DIODE 1SS119		
D205	8-719-901-83	DIODE 1SS83		
D206	8-719-911-19	DIODE 1SS119		
D207	8-719-911-19	DIODE 1SS119		
D209	8-719-911-19	DIODE 1SS119		
D210	8-719-109-51	DIODE RD2.0ESB2		
D211	8-719-911-19	DIODE 1SS119		
D212	8-719-911-19	DIODE 1SS119		
D213	8-719-911-19	DIODE 1SS119		
D214	8-719-110-36	DIODE RD13ESB2		
		<IC>		
IC1	8-759-929-65	IC LM7912CT		
IC2	8-759-701-79	IC NJM7812FA		
IC3	8-759-991-41	IC LM78L05ACZ		
IC4	8-759-000-01	IC MC74HC4538N		
IC5	8-759-984-55	IC MB675429		
IC6	8-759-916-71	IC SN74HC244AN		
IC7	8-759-032-74	IC MC74HC00AN		
IC8	8-759-990-82	IC TL082CP		
IC101	8-749-922-43	IC VPH05A		
IC102	8-759-990-82	IC TL082CP		
IC103	8-749-920-88	IC SNY-8C02		
IC104	8-749-923-15	IC TY885002A		
IC201	8-749-922-43	IC VPH05A		
IC202	8-759-990-82	IC TL082CP		
IC203	8-749-920-88	IC SNY-8C02		
IC204	8-749-923-15	IC TY885002A		
		<COIL>		
L101	1-408-880-00	INDUCTOR	0.68UH	
L201	1-408-880-00	INDUCTOR	0.68UH	

REF.NO.	PART NO.	DESCRIPTION				REMARK
		<TRANSISTOR>				
Q1	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q2	8-729-900-36	TRANSISTOR DTC124ES				
Q3	8-729-900-36	TRANSISTOR DTC124ES				
Q4	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q5	8-729-119-76	TRANSISTOR 2SA1175-HFE				
Q6	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q7	8-729-119-76	TRANSISTOR 2SA1175-HFE				
Q8	8-729-119-76	TRANSISTOR 2SA1175-HFE				
Q9	8-729-119-76	TRANSISTOR 2SA1175-HFE				
Q10	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q11	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q12	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q13	8-729-119-76	TRANSISTOR 2SA1175-HFE				
Q14	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q15	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q16	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q17	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q18	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q19	8-729-119-76	TRANSISTOR 2SA1175-HFE				
Q101	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q102	8-729-140-50	TRANSISTOR 2SC3209LK				
Q103	8-729-801-88	TRANSISTOR 2SA1381-E				
Q104	8-729-801-88	TRANSISTOR 2SA1381-E				
Q105	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q106	8-729-140-50	TRANSISTOR 2SC3209LK				
Q107	8-729-801-88	TRANSISTOR 2SA1381-E				
Q108	8-729-900-63	TRANSISTOR DTA124ES				
Q109	8-729-900-63	TRANSISTOR DTA124ES				
Q110	8-729-900-36	TRANSISTOR DTC124ES				
Q111	8-729-105-74	TRANSISTOR 2SK523-M1				
Q112	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q113	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q201	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q202	8-729-140-50	TRANSISTOR 2SC3209LK				
Q203	8-729-801-88	TRANSISTOR 2SA1381-E				
Q204	8-729-801-88	TRANSISTOR 2SA1381-E				
Q205	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q206	8-729-140-50	TRANSISTOR 2SC3209LK				
Q207	8-729-801-88	TRANSISTOR 2SA1381-E				
Q208	8-729-900-63	TRANSISTOR DTA124ES				
Q209	8-729-900-63	TRANSISTOR DTA124ES				
Q210	8-729-900-36	TRANSISTOR DTC124ES				
Q211	8-729-105-74	TRANSISTOR 2SK523-M1				
Q212	8-729-119-78	TRANSISTOR 2SC2785-HFE				
		<RESISTOR>				
R1	1-249-405-11	CARBON	100	5%	1/4W	
R2	1-215-437-00	METAL	4.7K	1%	1/4W	
R3	1-249-441-11	CARBON	100K	5%	1/4W	
R4	1-215-449-00	METAL	15K	1%	1/4W	
R5	1-249-405-11	CARBON	100	5%	1/4W	
R6	1-249-438-11	CARBON	56K	5%	1/4W	
R7	1-249-437-11	CARBON	47K	5%	1/4W	
R8	1-249-405-11	CARBON	100	5%	1/4W	
R9	1-215-449-00	METAL	15K	1%	1/4W	
R10	1-215-447-00	METAL	12K	1%	1/4W	
R11	1-249-405-11	CARBON	100	5%	1/4W	
R12	1-249-405-11	CARBON	100	5%	1/4W	
R13	1-249-441-11	CARBON	100K	5%	1/4W	
R14	1-249-423-11	CARBON	3.3K	5%	1/4W	
R15	1-249-397-11	CARBON	22	5%	1/4W	F

CA(RG) Y

REF.NO.	PART NO.	DESCRIPTION				REMARK
R16	1-249-405-11	CARBON	100	5%	1/4W	
R17	1-249-423-11	CARBON	3.3K	5%	1/4W	
R18	1-249-426-11	CARBON	5.6K	5%	1/4W	
R19	1-249-415-11	CARBON	680	5%	1/4W	
R20	1-249-397-11	CARBON	22	5%	1/4W	F
R21	1-249-413-11	CARBON	470	5%	1/4W	
R22	1-215-443-00	METAL	8.2K	1%	1/4W	
R23	1-215-447-00	METAL	12K	1%	1/4W	
R24	1-215-453-00	METAL	22K	1%	1/4W	
R25	1-215-457-00	METAL	33K	1%	1/4W	
R26	1-249-405-11	CARBON	100	5%	1/4W	
R27	1-249-405-11	CARBON	100	5%	1/4W	
R28	1-215-431-00	METAL	2.7K	1%	1/4W	
R29	1-249-429-11	CARBON	10K	5%	1/4W	
R30	1-215-469-00	METAL	100K	1%	1/4W	
R31	1-249-429-11	CARBON	10K	5%	1/4W	
R32	1-215-443-00	METAL	8.2K	1%	1/4W	
R33	1-215-443-00	METAL	8.2K	1%	1/4W	
R34	1-215-443-00	METAL	8.2K	1%	1/4W	
R35	1-247-887-00	CARBON	220K	5%	1/4W	
R36	1-247-887-00	CARBON	220K	5%	1/4W	
R37	1-247-887-00	CARBON	220K	5%	1/4W	
R38	1-249-441-11	CARBON	100K	5%	1/4W	
R39	1-215-469-00	METAL	100K	1%	1/4W	
R40	1-249-433-11	CARBON	22K	5%	1/4W	
R41	1-215-471-00	METAL	120K	1%	1/4W	
R42	1-249-433-11	CARBON	22K	5%	1/4W	
R43	1-249-405-11	CARBON	100	5%	1/4W	
R44	1-249-429-11	CARBON	10K	5%	1/4W	
R101	1-215-401-11	METAL	150	1%	1/4W	
R102	1-215-401-11	METAL	150	1%	1/4W	
R103	1-215-473-00	METAL	150K	1%	1/4W	
R105	1-215-469-00	METAL	100K	1%	1/4W	
R106	1-215-465-00	METAL	68K	1%	1/4W	
R107	1-249-421-11	CARBON	2.2K	5%	1/4W	
R108	1-249-403-11	CARBON	68	5%	1/4W	F
R109	1-215-429-00	METAL	2.2K	1%	1/4W	
R111	1-249-421-11	CARBON	2.2K	5%	1/4W	
R112	1-215-383-00	METAL	27	1%	1/4W	
R116	1-215-473-00	METAL	150K	1%	1/4W	
R117	1-249-421-11	CARBON	2.2K	5%	1/4W	
R118	1-249-427-11	CARBON	6.8K	5%	1/4W	
R119	1-215-453-00	METAL	22K	1%	1/4W	
R120	1-215-469-00	METAL	100K	1%	1/4W	
R121	1-215-471-00	METAL	120K	1%	1/4W	
R122	1-215-441-00	METAL	6.8K	1%	1/4W	
R123	1-215-481-00	METAL	330K	1%	1/4W	
R124	1-215-433-00	METAL	3.3K	1%	1/4W	
R125	1-249-431-11	CARBON	15K	5%	1/4W	
R126	1-249-431-11	CARBON	15K	5%	1/4W	
R127	1-249-415-11	CARBON	680	5%	1/4W	
R128	1-249-405-11	CARBON	100	5%	1/4W	
R129	1-249-409-11	CARBON	220	5%	1/4W	F
R130	1-215-431-00	METAL	2.7K	1%	1/4W	
R131	1-202-549-00	SOLID	100	5%	1/2W	
R132	1-202-818-00	SOLID	1K	10%	1/2W	
R133	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R134	1-249-429-11	CARBON	10K	5%	1/4W	
R135	1-215-469-00	METAL	100K	1%	1/4W	
R136	1-202-549-00	SOLID	100	5%	1/2W	
R137	1-215-443-00	METAL	8.2K	1%	1/4W	
R138	1-215-435-00	METAL	3.9K	1%	1/4W	
R139	1-249-421-11	CARBON	2.2K	5%	1/4W	
R140	1-215-453-00	METAL	22K	1%	1/4W	
R141	1-215-421-00	METAL	1K	1%	1/4W	
R142	1-249-417-11	CARBON	1K	5%	1/4W	
R143	1-247-903-00	CARBON	1M	5%	1/4W	
R144	1-249-427-11	CARBON	6.8K	5%	1/4W	
R145	1-249-405-11	CARBON	100	5%	1/4W	
R146	1-247-895-00	CARBON	470K	5%	1/4W	
R147	1-215-457-00	METAL	33K	1%	1/4W	
R148	1-249-410-11	CARBON	270	5%	1/4W	F
R149	1-249-405-11	CARBON	100	5%	1/4W	
R201	1-215-401-11	METAL	150	1%	1/4W	
R202	1-215-401-11	METAL	150	1%	1/4W	
R203	1-215-461-00	METAL	47K	1%	1/4W	
R204	1-215-469-00	METAL	100K	1%	1/4W	
R205	1-215-469-00	METAL	100K	1%	1/4W	
R206	1-215-471-00	METAL	120K	1%	1/4W	
R207	1-249-421-11	CARBON	2.2K	5%	1/4W	
R208	1-249-403-11	CARBON	68	5%	1/4W	F
R209	1-215-429-00	METAL	2.2K	1%	1/4W	
R211	1-249-421-11	CARBON	2.2K	5%	1/4W	
R212	1-215-383-00	METAL	27	1%	1/4W	
R216	1-215-473-00	METAL	150K	1%	1/4W	
R217	1-249-421-11	CARBON	2.2K	5%	1/4W	
R218	1-249-427-11	CARBON	6.8K	5%	1/4W	
R219	1-215-453-00	METAL	22K	1%	1/4W	
R220	1-215-469-00	METAL	100K	1%	1/4W	
R221	1-215-471-00	METAL	120K	1%	1/4W	
R222	1-215-441-00	METAL	6.8K	1%	1/4W	
R223	1-215-481-00	METAL	330K	1%	1/4W	
R224	1-215-433-00	METAL	3.3K	1%	1/4W	
R225	1-249-431-11	CARBON	15K	5%	1/4W	
R226	1-249-431-11	CARBON	15K	5%	1/4W	
R227	1-249-415-11	CARBON	680	5%	1/4W	
R228	1-249-405-11	CARBON	100	5%	1/4W	
R229	1-249-409-11	CARBON	220	5%	1/4W	F
R230	1-215-431-00	METAL	2.7K	1%	1/4W	
R231	1-202-549-00	SOLID	100	5%	1/2W	
R232	1-202-818-00	SOLID	1K	10%	1/2W	
R233	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R234	1-215-469-00	METAL	100K	1%	1/4W	
R235	1-249-429-11	CARBON	10K	5%	1/4W	
R236	1-202-549-00	SOLID	100	5%	1/2W	
R237	1-215-443-00	METAL	8.2K	1%	1/4W	
R238	1-215-435-00	METAL	3.9K	1%	1/4W	
R239	1-249-421-11	CARBON	2.2K	5%	1/4W	
R240	1-215-453-00	METAL	22K	1%	1/4W	
R241	1-215-421-00	METAL	1K	1%	1/4W	
R242	1-249-417-11	CARBON	1K	5%	1/4W	
R243	1-247-903-00	CARBON	1M	5%	1/4W	
R244	1-249-427-11	CARBON	6.8K	5%	1/4W	
R245	1-249-405-11	CARBON	100	5%	1/4W	
R246	1-247-895-00	CARBON	470K	5%	1/4W	
R247	1-249-405-11	CARBON	100	5%	1/4W	

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	*A-1394-215-A	Y BOARD, COMPLETE *****************
	*1-526-950-11	SOCKET, IC 64P
	*1-568-984-11	CONNECTOR, MALE 96P
	1-570-204-21	SWITCH, KEY BOARD
	1-570-598-11	SWITCH, DIP

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION		REMARK
C1	1-124-927-11	ELECT 4.7MF	20%	50V
C2	1-124-927-11	ELECT 4.7MF	20%	50V
C3	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C4	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C5	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C6	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C7	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C8	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C9	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C10	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C11	1-163-251-11	CERAMIC CHIP 100PF	5%	50V
C12	1-163-239-11	CERAMIC CHIP 33PF	5%	50V
C13	1-163-239-11	CERAMIC CHIP 33PF	5%	50V
C14	1-163-036-00	CERAMIC CHIP 0.068MF		50V
C15	1-164-344-11	CERAMIC CHIP 0.068MF	10%	25V
C16	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C17	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C18	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C19	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C20	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C21	1-163-097-00	CERAMIC CHIP 15PF	5%	50V
C22	1-163-099-00	CERAMIC CHIP 18PF	5%	50V
C23	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C24	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C25	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C26	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C27	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C28	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C29	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C30	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C32	1-163-263-11	CERAMIC CHIP 330PF	5%	50V
C33	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C34	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C35	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C36	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C37	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C38	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C39	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C40	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C41	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C42	1-124-477-11	ELECT 47MF	20%	16V
C43	1-163-251-11	CERAMIC CHIP 100PF	5%	50V
C45	1-163-089-00	CERAMIC CHIP 6PF	0.5PF	50V
C46	1-163-235-11	CERAMIC CHIP 22PF	5%	50V
C47	1-124-119-00	ELECT 330MF	20%	16V
C48	1-124-477-11	ELECT 47MF	20%	16V
C49	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C50	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C51	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C52	1-126-103-11	ELECT 470MF	20%	16V
C53	1-126-101-11	ELECT 100MF	20%	16V
C54	1-126-101-11	ELECT 100MF	20%	16V
C55	1-126-101-11	ELECT 100MF	20%	16V
C56	1-126-101-11	ELECT 100MF	20%	16V
C57	1-163-227-11	CERAMIC CHIP 10PF	0.5PF	50V
C58	1-163-227-11	CERAMIC CHIP 10PF	0.5PF	50V
C59	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C60	1-163-251-11	CERAMIC CHIP 100PF	5%	50V
C61	1-163-251-11	CERAMIC CHIP 100PF	5%	50V
C62	1-163-251-11	CERAMIC CHIP 100PF	5%	50V
C63	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C64	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C65	1-163-036-00	CERAMIC CHIP 0.068MF		50V
C67	1-124-119-00	ELECT 330MF	20%	16V
C68	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C69	1-163-121-00	CERAMIC CHIP 150PF	5%	50V
C70	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C71	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C72	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C73	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C74	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C75	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C76	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C77	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C78	1-124-907-11	ELECT 10MF	20%	50V
C83	1-124-907-11	ELECT 10MF	20%	50V
C84	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C85	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C86	1-163-133-00	CERAMIC CHIP 470PF	5%	50V
C87	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C90	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C91	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C92	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V

<DIODE>

REF.NO.	PART NO.	DESCRIPTION	REMARK
D1	8-719-971-20	DIODE ERC38-06	
D2	8-719-971-20	DIODE ERC38-06	
D3	8-719-104-34	DIODE 1S2836	
D4	8-719-800-60	DIODE TLR214	
D5	8-719-104-34	DIODE 1S2836	
D7	8-719-400-18	DIODE MA152WK	

<IC>

REF.NO.	PART NO.	DESCRIPTION	REMARK
IC1	8-759-320-49	IC HD64180R1P8	
IC2	8-759-092-89	IC MBM27C512P-20-PJY015	
IC3	8-752-332-28	IC CXK5864BM-12L-T6	
IC4	8-759-720-67	IC X28C64PI	
IC5	8-759-032-17	IC MC74HC14AF	
IC6	8-759-206-28	IC TC74HC123F	
IC7	8-759-008-21	IC MC74HC541F	
IC8	8-759-008-21	IC MC74HC541F	
IC9	8-759-995-97	IC MB8855-1314N	
IC10	8-759-984-56	IC MB670840PF	
IC11	8-759-984-59	IC MB654842UPF	
IC12	8-759-984-58	IC MB671469PF	
IC13	8-759-984-57	IC MB605195	
IC14	8-752-322-10	IC CXK5814P-45L	
IC15	8-752-353-42	IC CXK3864-040M-T6	
IC16	8-752-353-43	IC CXK3864-041M-T6	
IC17	8-752-353-44	IC CXK3864-042M-T6	
IC18	8-759-301-24	IC HD10124	
IC19	8-759-301-24	IC HD10124	
IC20	8-752-306-51	IC CX23065A	
	*1-563-949-11	SOCKET, SIL 8P; IC20	
IC21	8-759-911-24	IC SN74S124N	
IC22	8-759-100-93	IC UPC393G2	
IC23	8-759-031-50	IC MC74F00M	
IC24	8-759-008-57	IC MC34051P	
IC25	8-759-114-06	IC UPC814G2-T1	
IC26	8-759-032-32	IC MC74HC132AF	
IC27	8-759-925-98	IC SN74HC107ANS	
IC28	8-759-032-01	IC MC74HC00AF	
IC29	8-759-206-28	IC TC74HC123F	

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION		REMARK
C1	1-124-927-11	ELECT 4.7MF	20%	50V
C2	1-124-927-11	ELECT 4.7MF	20%	50V
C3	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C4	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C5	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C6	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C7	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C8	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C9	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C10	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C11	1-163-251-11	CERAMIC CHIP 100PF	5%	50V
C12	1-163-239-11	CERAMIC CHIP 33PF	5%	50V
C13	1-163-239-11	CERAMIC CHIP 33PF	5%	50V
C14	1-163-036-00	CERAMIC CHIP 0.068MF		50V
C15	1-164-344-11	CERAMIC CHIP 0.068MF	10%	25V
C16	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C17	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C18	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C19	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C20	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C21	1-163-097-00	CERAMIC CHIP 15PF	5%	50V
C22	1-163-099-00	CERAMIC CHIP 18PF	5%	50V
C23	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C24	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C25	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C26	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C27	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C28	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C29	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C30	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C32	1-163-263-11	CERAMIC CHIP 330PF	5%	50V
C33	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C34	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C35	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C36	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C37	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C38	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C39	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C40	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C41	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C42	1-124-477-11	ELECT 47MF	20%	16V
C43	1-163-251-11	CERAMIC CHIP 100PF	5%	50V
C45	1-163-089-00	CERAMIC CHIP 6PF	0.5PF	50V
C46	1-163-235-11	CERAMIC CHIP 22PF	5%	50V
C47	1-124-119-00	ELECT 330MF	20%	16V
C48	1-124-477-11	ELECT 47MF	20%	16V
C49	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C50	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C51	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C52	1-126-103-11	ELECT 470MF	20%	16V
C53	1-126-101-11	ELECT 100MF	20%	16V
C54	1-126-101-11	ELECT 100MF	20%	16V
C55	1-126-101-11	ELECT 100MF	20%	16V
C56	1-126-101-11	ELECT 100MF	20%	16V
C57	1-163-227-11	CERAMIC CHIP 10PF	0.5PF	50V
C58	1-163-227-11	CERAMIC CHIP 10PF	0.5PF	50V
C59	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C60	1-163-251-11	CERAMIC CHIP 100PF	5%	50V
C61	1-163-251-11	CERAMIC CHIP 100PF	5%	50V
C62	1-163-251-11	CERAMIC CHIP 100PF	5%	50V
C63	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C64	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C65	1-163-036-00	CERAMIC CHIP 0.068MF		50V
C67	1-124-119-00	ELECT 330MF	20%	16V
C68	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C69	1-163-121-00	CERAMIC CHIP 150PF	5%	50V
C70	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C71	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C72	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C73	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C74	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C75	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C76	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C77	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C78	1-124-907-11	ELECT 10MF	20%	50V
C83	1-124-907-11	ELECT 10MF	20%	50V
C84	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C85	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C86	1-163-133-00	CERAMIC CHIP 470PF	5%	50V
C87	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C90	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C91	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C92	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V

<DIODE>

REF.NO.	PART NO.	DESCRIPTION	REMARK
D1	8-719-971-20	DIODE ERC38-06	
D2	8-719-971-20	DIODE ERC38-06	
D3	8-719-104-34	DIODE 1S2836	
D4	8-719-800-60	DIODE TLR214	
D5	8-719-104-34	DIODE 1S2836	
D7	8-719-400-18	DIODE MA152WK	

<IC>

REF.NO.	PART NO.	DESCRIPTION	REMARK
IC1	8-759-320-49	IC HD64180R1P8	
IC2	8-759-092-89	IC MBM27C512P-20-PJY015	
IC3	8-752-332-28	IC CXK5864BM-12L-T6	
IC4	8-759-720-67	IC X28C64PI	
IC5	8-759-032-17	IC MC74HC14AF	
IC6	8-759-206-28	IC TC74HC123F	
IC7	8-759-008-21	IC MC74HC541F	
IC8	8-759-008-21	IC MC74HC541F	
IC9	8-759-995-97	IC MB8855-1314N	
IC10	8-759-984-56	IC MB670840PF	
IC11	8-759-984-59	IC MB654842UPF	
IC12	8-759-984-58	IC MB671469PF	
IC13	8-759-984-57	IC MB605195	
IC14	8-752-322-10	IC CXK5814P-45L	
IC15	8-752-353-42	IC CXK3864-040M-T6	
IC16	8-752-353-43	IC CXK3864-041M-T6	
IC17	8-752-353-44	IC CXK3864-042M-T6	
IC18	8-759-301-24	IC HD10124	
IC19	8-759-301-24	IC HD10124	
IC20	8-752-306-51	IC CX23065A	
	*1-563-949-11	SOCKET, SIL 8P; IC20	
IC21	8-759-911-24	IC SN74S124N	
IC22	8-759-100-93	IC UPC393G2	
IC23	8-759-031-50	IC MC74F00M	
IC24	8-759-008-57	IC MC34051P	
IC25	8-759-114-06	IC UPC814G2-T1	
IC26	8-759-032-32	IC MC74HC132AF	
IC27	8-759-925-98	IC SN74HC107ANS	
IC28	8-759-032-01	IC MC74HC00AF	
IC29	8-759-206-28	IC TC74HC123F	

Y

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION				REMARK
		<COIL>				
L1	1-459-155-00	COIL (WITH CORE) 45UH				
L2	1-459-155-00	COIL (WITH CORE) 45UH				
L3	1-459-155-00	COIL (WITH CORE) 45UH				
L4	1-459-155-00	COIL (WITH CORE) 45UH				
		<IC LINK>				
PS1	⚠ 1-532-679-91	LINK, IC				
PS2	⚠ 1-532-679-91	LINK, IC				
		<TRANSISTOR>				
Q1	8-729-230-46	TRANSISTOR 2SA1162-YG				
Q2	8-729-230-49	TRANSISTOR 2SC2712-YG				
Q3	8-729-230-46	TRANSISTOR 2SA1162-YG				
Q4	8-729-230-46	TRANSISTOR 2SA1162-YG				
Q5	8-729-230-49	TRANSISTOR 2SC2712-YG				
Q6	8-729-230-49	TRANSISTOR 2SC2712-YG				
Q7	8-729-230-49	TRANSISTOR 2SC2712-YG				
Q9	8-729-230-46	TRANSISTOR 2SA1162-YG				
		<RESISTOR>				
R1	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R2	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R3	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R4	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R5	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R6	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R7	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R8	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R9	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R10	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R11	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R12	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R13	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R14	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R15	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R17	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R18	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R19	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R20	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R21	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R22	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R23	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R24	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R25	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R26	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R27	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R28	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R29	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R30	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R31	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R32	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R33	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R34	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R36	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R37	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R38	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R39	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R40	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R41	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R42	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R43	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R44	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R45	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R46	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R47	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R48	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R49	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R50	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R51	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R52	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R53	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R54	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R55	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R56	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R57	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R58	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R59	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R60	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R61	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R62	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R63	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R64	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R65	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R66	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R67	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R68	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R69	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R70	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R71	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R72	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R73	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R74	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R75	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R76	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R77	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R78	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R79	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R80	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R81	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R82	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R83	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R84	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R85	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R86	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R87	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R88	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R89	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R90	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R91	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R92	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R93	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R100	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R101	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R102	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R103	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R104	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R105	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R106	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R107	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R108	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R109	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R110	1-216-097-00	METAL GLAZE	100K	5%	1/10W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R111	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R112	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R113	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R114	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R115	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R116	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R117	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R118	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R119	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R120	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R121	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R122	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R123	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R124	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R125	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R126	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R127	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R128	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R129	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R130	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R131	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R132	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R133	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R134	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R135	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R136	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R137	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R138	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R139	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R140	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R141	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R142	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R143	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R146	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R147	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R148	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R149	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R150	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R151	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R152	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R153	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R154	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R155	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R166	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R167	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R168	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R169	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R170	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R171	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R172	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R173	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R174	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R175	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R176	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R177	1-216-129-00	METAL GLAZE	2.2M	5%	1/10W	
R178	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R182	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R183	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R184	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R185	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R187	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R189	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R190	1-216-037-00	METAL GLAZE	330	5%	1/10W	

<CRYSTAL>

REF.NO.	PART NO.	DESCRIPTION	REMARK
X1	1-578-687-11	VIBRATOR, CRYSTAL	
X2	1-577-116-21	VIBRATOR, CRYSTAL	
X3	1-567-192-11	OSCILLATOR, CERAMIC	
X4	1-577-353-11	VIBRATOR, CERAMIC	

7074

HDIH-1200M
RM-1200

SONY
SERVICE MANUAL

AEP Model
Chassis No. SCC-D16B-A

SUPPLEMENT-2

File this supplement with the service manual.

INTRODUCTION

SUBJECT : Change of WHITE BALANCE adjustment

The brightness degree has been changed on model with the following serial number, and due to this, the white balance adjustment method has also been changed.

Serial No. 5000026 and later

Correspond to 500 lm model

4-13. WHITE BALANCE ADJUSTMENT

Preparations

1. Remove the commander blinders.
2. Press the [TEST] key and hold it for at least 5 seconds.
3. The screen changes and the serviceman mode display appears.
4. Press the [▲] arrow key.

This puts the system into serviceman mode.

1. Blue defocus adjustment

1) Press the FOCUS [MG] key to put the system into magnet focus adjustment mode.
2) Press the ADJ [B] key.
3) Press the [◀] arrow key to minimize the setting, then press the [▶] key to move in the direction of the point where the image is just focused and adjust for the point where the gaps between the horizontal lines and between the vertical lines can be seen (slightly defocused).

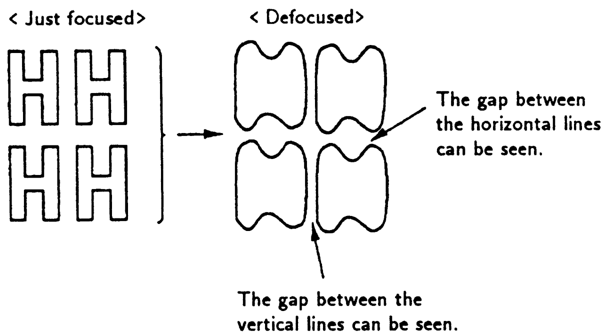


Fig. 26

4) Press the [MEMORY] key.

2. G2 volume adjustment

1) Short pines ① and ② on the CF2-3 connector of the CF-2 board. (Remove the L-6 connector from the L board and attach it to pines ① and ② of the CF2-3 connector to short them.)
2) Input a high vision signal. (Shibasoku TG91E6, etc.)
3) Press the [TEST] key to set an all-white signal.
4) Press the [PAGE] key and select PAGE 4.
5) Press the ([◀] and [▶]) arrow keys to select HDTV1.
6) Press the ([▲] and [▼]) arrow keys to select input signal mode.
7) Next, press the [◀] or [▶] key to select RGB or Y, PB, PR according to the input.
8) In the same way, use the ([◀], [▶], [▲], and [▼]) arrow keys to select COLOR SELECT : COL.
9) In the same way, use the ([◀], [▶], [▲], and [▼]) arrow keys to select SYNC SOURCE : INT or EXT.
10) Press the [MEMORY] key.
11) Press [GAIN] key, and adjust the GAIN data with arrow-keys ([◀] , [▶]) to the values below R : 150, G : 240, B : 250
12) Press [BIAS] key, and adjust the BIAS data with arrow-keys ([◀] , [▶]) to the values below R : 128, G : 128, B : 128
From now, select HDTV2, VID1 and VID2 and set the gain and bias for each of them.

GAIN DATA

HDTV2	R : 150
	G : 220
	B : 250
VID1	R : 140
	G : 200
	B : 200
VID2	R : 140
	G : 200
	B : 200

BIAS DATA

HDTV2	R : 128
VID1	G : 128
VID2	B : 128

13) Press the [TEST] key and display the pluge signal on the screen.
14) In a dark room, turn the G2 control to adjust the red, green, and blue single-color brightnesses this way.
   • Adjust so that 0 IRE (background) is the same brightness as - 5 IRE and so +5 IRE glows slightly.

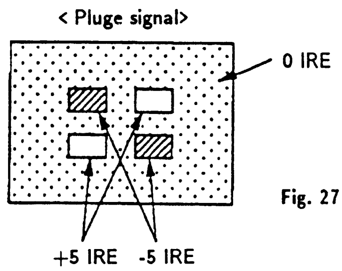


Fig. 27

15) Remove the short on the CF2-3 connector.

Correspond to 500 lm model

3. HDTV1 white balance adjustment (6500 ° K)

1) Press [PAGE] key to select "PAGE 4".
2) Press arrow-keys to select "HDTV1".
3) Press [BIAS] key (or [GAIN] key) to enter to the adjustment mode.
4) Press both arrow keys (◀ and ▶) together, then check if the message below is displayed.

factory preset data?
Yes : ▲
No : ▼

5) Press arrow key ▲. (By this process, the factory preset data is put into the memory.)
6) Press [BIAS] key.
7) Keep pressing [TEST] key until the screen is changed to that of all-white signal.
8) Set CONT at the lowest, and then set BRT at the lowest.
9) Use a color meter (such as MINOLTA's CS-100) and adjust Blue and Red to set the values at x : 0.313 ± 0.025, and y : 0.329 ± 0.025. Do not adjust Green BIAS value.
10) Press [MEMORY] key.
11) Press [GAIN] key.
12) Keep pressing [TEST] key until the screen is changed to that of external signals.
13) Press [RESET] key, and set CONT at 80% and BRT at 50%.
14) Use the color meter and adjust Blue and Red to set the values at x : 0.313 ± 0.015, and y : 0.329 ± 0.015. Do not adjust Green GAIN value.
15) Press [MEMORY] key.

4. HDTV2 white balance adjustment (9300 ° K)

1) Press [PAGE] key to select "PAGE 4".
2) Press arrow-keys to select "HDTV2".
3) Press [BIAS] key (or [GAIN] key) to enter to the adjustment mode.
4) Press both arrow keys (◀ and ▶) together, then check if the message below is displayed.

factory preset data?
Yes : ▲
No : ▼

5) Press arrow key ▲. (By this process, the factory preset data is put into the memory.)
6) Press [BIAS] key.
7) Keep pressing [TEST] key until the screen is changed to that of all-white signal.
8) Set CONT at the lowest, and then set BRT at the lowest.
9) Use a color meter (such as MINOLTA's CS-100) and adjust Blue and Red to set the values at x : 0.284 ± 0.025, and y : 0.329 ± 0.025. Do not adjust Green BIAS value.
10) Press [MEMORY] key.
11) Press [GAIN] key.
12) Keep pressing [TEST] key until the screen is changed to that of external signals.
13) Press [RESET] key, and set CONT at 80% and BRT at 50%.
14) Use the color meter and adjust Blue and Red to set the values at x : 0.313 ± 0.015, and y : 0.329 ± 0.015. Do not adjust Green GAIN value.
15) Press [MEMORY] key.

Correspond to 500 lm model

5. VID1 white balance adjustment (6500 ° K)

1) Press [PAGE] key to select "PAGE 4".
2) Press arrow-keys to select "VID1".
3) Press [BIAS] key (or [GAIN] key) to enter to the adjustment mode.
4) Press both arrow keys (◀ and ▶) together, then check if the message below is displayed.

factory preset data?
Yes : ▲
No : ▼

5) Press arrow key ▲. (By this process, the factory preset data is put into the memory.)
6) Press [BIAS] key.
7) Keep pressing [TEST] key until the screen is changed to that of all-white signal.
8) Set CONT at the lowest, and then set BRT at the lowest.
9) Use a color meter (such as MINOLTA's CS-100) and adjust Blue and Red to set the values at x : 0.313 ± 0.025, and y : 0.329 ± 0.025. Do not adjust Green BIAS value.
10) Press [MEMORY] key.
11) Press [GAIN] key.
12) Keep pressing [TEST] key until the screen is changed to that of external signals.
13) Press [RESET] key, and set CONT at 80% and BRT at 50%.
14) Use the color meter and adjust Blue and Red to set the values at x : 0.313 ± 0.015, and y : 0.329 ± 0.015. Do not adjust Green GAIN value.
15) Press [MEMORY] key.

6. VID2 white balance adjustment (9300 ° K)

1) Press [PAGE] key to select "PAGE 4".
2) Press arrow-keys to select "VID2".
3) Press [BIAS] key (or [GAIN] key) to enter to the adjustment mode.
4) Press both arrow keys (◀ and ▶) together, then check if the message below is displayed.

factory preset data?
Yes : ▲
No : ▼

5) Press arrow key ▲. (By this process, the factory preset data is put into the memory.)
6) Press [BIAS] key.
7) Keep pressing [TEST] key until the screen is changed to that of all-white signal.
8) Set CONT at the lowest, and then set BRT at the lowest.
9) Use a color meter (such as MINOLTA's CS-100) and adjust Blue and Red to set the values at x : 0.284 ± 0.025, and y : 0.297 ± 0.025. Do not adjust Green BIAS value.
10) Press [MEMORY] key.
11) Press [GAIN] key.
12) Keep pressing [TEST] key until the screen is changed to that of external signals.
13) Press [RESET] key, and set CONT at 80% and BRT at 50%.
14) Use the color meter and adjust Green and Red to set the values at x : 0.284 ± 0.015, and y : 0.297 ± 0.015. Do not adjust Blue GAIN value.
15) Press [MEMORY] key.

Correspond to 500 lm model

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